THE ACQUISITION OF VERB INFLECTION IN Q'ANJOB'AL MAYA: A LONGITUDINAL STUDY

By

Pedro Mateo Pedro
Lic., Universidad Rafael Landívar, Guatemala, 2000
M.A., University of Kansas, Kansas, USA, 2005

Submitted to the Department of Linguistics and the
Graduate Faculty of the University of Kansas
In partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Clifton Pye
Chairperson

Committee Members: Brent Metz

Harold Torrence

Sara Rosen

Donald Watkins

Date defended: 6/24/2010

The Dissertation Committee for Pedro Mateo Pedro certifies that this is the approved version of the following dissertation:

The Acquisition of Verb Inflection in Q'anjob'al Maya:
A Longitudinal Study

Clifton Pye
Chairperson

Committee Members: Brent Metz

Harold Torrence

Sara Rosen

Donald Watkins

Date Approved: 7/1/2010

List of Tables

Chapter 6

Chapter 7

Chapter 8

List of Figures

Chapter 5

Chapter 6

List of Abbreviations and Symbols

1	First person
2	Second person
3	Third person
A	Absolutive morpheme
ABS	Abstract noun
ADV	Adverb
AP	Antipassive voice
CAU	Causative
CL	Noun classifier
COM	Completive aspect
COMPL	Complementizer
COND	Conditional
DEM	Demonstrative
DEP	Dependent suffix
DER	Derivation
DET	Determiner
DIR	Directional
DTV	Status suffix for derived transitive verbs
E	Ergative morpheme
EMPH	Emphasis
ENCL	Enclitic
EXCL	Exclusive
EXST	Existential
FOC	Focus

IMP	Imperative
INC	Incompletive aspect
IND	Indicative suffix
INTR	Intransitivizer
INTS	Intensifier
IRR	Irrealis
IV	Intransitive status suffix
LOC	Locative pronoun
NEG	Negation
NF	Non-final position
NOM	Nominalizer
NVP	Non-verbal predicate
PAS	Passsive voice
PAST	Past tense
PL	Plural
POS	Positional
POT	Potential aspect
PRE	Preposition
PROG	Progressive
PROLOC	Locative pronoun
RCOM	Remote completive aspect
REFL	Reflexive
RN	Relational noun
RTV	Status suffix for root transitive verbs
SUF	Suffix
TV	Transitive status suffix
*	Absence of an inflectional morpheme
/	Identification of child's verb
_	Identification of adult form
ø	Third person singular

B’ay

kamnaq hintxutx ixnam Matal Xhimon,

kamnaq hinmamin Lwin Mat,

k’al heb’ unin lanan yel sti’ yin Q’anjob’al

ABSTRACT

Pedro Mateo Pedro
Department of Linguistics, June 2010
University of Kansas

Most first language acquisition studies have shown that children frequently omit verb inflections in matrix clauses (e.g. Brown, 1973). This dissertation investigates the acquisition of verb inflection in imperative, indicative, nominalized, and dependent clauses in Q'anjob'al, a Mayan language spoken in Guatemala, the southern part of Mexico, and the United States. The dissertation analyzes original and longitudinal child data from three Q'anjob'al-speaking children (ages 1;9-3;1), who were recorded in the community of Santa Eulalia, Huehuetenango, Guatemala. Each type of clause has a specific verb inflection. In indicative clauses, the verb is inflected for aspect, agreement, and status; in nominalized contexts, intransitive verbs take ergative morphemes instead of absolutive morphemes, while transitive verbs take the suffix *-on* and the suffix *-i* instead of the transitive status suffixes *-v'*/*-j*. In this clause type, intransitive and transitive verbs lack aspect marking. Dependent and imperative verbs take only a status suffix. The imperative form for intransitive verbs, unlike the dependent form, maintains the imperative status suffix in non-final and final positions. Since the imperative form for intransitive verbs has only a single inflection that does not change with position, it is the simplest form, and the one form that children might acquire early and overextend to indicative, nominalized, and dependent clauses with intransitive and transitive verbs.

Analyses of the children's frequency of use in obligatory contexts, verb forms, and inflectional productivity show that while Q'anjob'al children optionally omit inflections on verbs in indicative clauses as shown in other Mayan languages, they produce distinct verb inflections in imperative, indicative, nominalized, and dependent clauses. The frequency analysis shows that these children acquire status suffixes before aspect and agreement prefixes. The verb form analysis shows that they produce bare stems in the four clause types, but they did not produce a default verb form as Salustri and Hyams (2003), or Bybee (1995) suggest. The productivity analysis (Gathercole, et. al, 1999) shows that these children are productive with status suffixes but not with prefixes for aspect or agreement. The findings have significant implications for first language acquisition theories, especially for those theories that predict a default form.

Acknowledgment

The completion of this study would not be possible without the support of many people and many organizations. First of all, I would not be able to say anything about the acquisition of Q'anjob'al without child data. For this, I give my special thanks to the group of Q'anjob'al children from the community of Santa Eulalia, Huehuetenango, Guatemala for letting me explore and record their language. Their parents kindly gave me permission to work with their children. Hex wuxhtaq hex wanab', yuj wal dios ayex yuj tol maxin hecha' b'ay heyatut yet max hinmulnaj yetoq heyuninal. Hex unin, yuj wal dios ayex yuj tol max heb'eq hek'uloq heq'anjab' wetoq. Thanks the Q'anjob'al team of the Mayan Language Acquisition Project for their tireless work on transcription, translation, and codification of the Q'anjob'al child data. Flora García, Diego Martínez Esteban, Francisco Pedro Mateo, Pedro Martínez Esteban, Efraín Ramón de León, Basilio Luin Bernabé, Basilio Sebastian Basilio, Matlol yuj wal dios ayex yuj hekolk'al k'al hemulnajil ti. Tix janik' tzet max hintz'ib'ej yin tzet chi yun yel sti' heb' unin yul Q'anjob'al.

I also want to thank Ana López Ramírez and her family in San Ildefonso Ixtahuacán, Huehuetenango, Guatemala, and Pedro Gutiérrez Sánchez and his family in Tila, Chiapas for their hospitality during our fieldwork on the acquisition of Mam and Ch'ol. Ana y Pedro gracias por compartir conmigo su cultura, por su apoyo y por su trabajo en el proyecto de Documentación de la Adquisición de las Lenguas Mayas: Ch'ol, Mam y Q'anjob'al.

Secondly, my special thank to Clifton Pye, my advisor and dissertation committee chair. His interest and passion for the acquisition of Mayan languages motivated me to study the acquisition of Q'anjob'al Maya. His constant questions about different aspects of Q'anjob'al heped me not only to look at the child data impartially but also to increase my understanding of

how children acquire the language. He provided me with computer software for data analysis and coding. His patience and time invested in reading and giving me feedback made accomplishing this study a reality. I have learned a lot from Cliff by doing language acquisition in the field and presenting results of my own study at conferences. Cliff, thank you for what I have learned from you and for the impact you have made in my carreer.

The rest of my committee members helped in different ways. Harold gave me helpful feedback in organizing my ideas in the present dissertation. Harold has also helped me to present my ideas in both classroom and conference environments. Donald Watkins helped to understand linguistics from a comparative and historical perspective. Sara Rosen thank you for what you taught me in syntax and for discussing with me my preliminary ideas about the suffix *-on* in Q'anjob'al. Brent Metz, my outsider committee member, also provided me with comments on a previous version of the present dissertation. Gracias Brent por tu apoyo. Working under my committee members' direction does not mean that they are responsible for the content of the present study. The mistakes and misunderstanding of the Q'anjob'al child data are all my responsibilities. Thanks to Lanny Maddux for editing the whole document.

I would like to give special thanks to the Linguistic faculty, staff, and the facilities that I had access to during my years at the University of Kansas, especially the Mayan Language Acquisition Laboratory. My special thanks to Alison Gabriel and Harold Torrence for being my mentors while being a GTA in Linguistics. I also want to thank Kelly, Khady, Sara Jean and Pepe for their support in the teaching, especially to Kelly and Khady. I learned a lot from all of you.

It is a privilege to thank Mabel Rice and Susan Kemper from the Doctoral Child Language Program at the University of Kansas for their interest and support in my research on the

acquisition of Q'anjob'al. Thank you for giving me the opportunity to present my research at the Doctoral Child Language Proseminar. It is also a privilege to thank Lourdes de León from CIESAS, Mexico and Bárbara Pfeiler from the Centro Peninsular en Humanidades y Ciencias Sociales de la Universidad Autónoma de México, Mérida, Mexico for being my great teachers in Mayan language acquisition, for giving me the opportunity to do collaborative work on Mayan language acquisition, and for publishing part of my acquisition research in Q'anjob'al. I also want to thank the faculty members of the Center of Latin American Studies at the University of Kansas for giving me the opportunity to present my work on the acquisition of Mayan languages.

I also want to thank Nikte', Saqjumay, Adán, Lolmay, Waykan, Ajb'ee, and Saqch'en from Oxlajuuj Keej Maya' Ajtz'iib', who taught me about Mayan languages. My special thanks to Ixkeem Nora England from the University of Texas at Austin and B'alam Mateo Toledo from CIESAS for their encouragement and support in studying Mayan linguistics. I received constant questions from B'alam about the stage of the dissertation and his criticism of my work about the acquisition of Q'anjob'al. B'alam, yuj wal dios ayach yuj hamulnajil yib'an Q'anjob'al, yuj hakolwaj, k'al yuj haq'enleb'al yib'an hinmulnajil yin tzet chi yun yel sti' heb' unin yul Q'anjob'al. I would like to thank my professors from the Universidad Rafael Landívar and the Universidad Mariano Gálvez de Guatemala from Guatemala such as Pedro Gaspar González, Ofelia de Titus, and Verónica Mérida.

My research on the acquisition of Q'anjob'al would not be possible without financial support. My research has been funded by the National Science Foundation (BCS 0515120 & BCS 0613120) given to Clifton Pye (2005-2010), an NSF Doctoral Dissertation Improvement Grant (BCS-0948638) (2010), and a grant from the Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS), Mexico (2009). During my fieldwork on the

acquisition of Q'anjob'al, I also received summer grants such as the Robert Oppenheimer Memorial Scholarship (2009), the Tinker Field Research Grant (2008), and the Latin American Studies Fieldwork Grant (2006) through the Center of Latin American Studies at the University of Kansas; and the Schiefelbusch Child Language Scholarship (2007) through the Doctoral Child Language Program, also at the University of Kansas. Without the financial support from CIRMA-FORD I would not be able to finish my MA in Linguistics at the University of Kansas. Anabella, Aracely y Susana gracias por todo el apoyo que me brindaron cuando estuve estudiando para la maestría y también durante el doctorado. I would not have my family with me in the US without additional support. My special thanks to the Climer family and the Pye family for their sponsorship.

I also want to thank my friends who helped me and encouraged me during my years at the University of Kansas. Lanny Maddux hosted me and my family at his house during my first week at the University of Kansas. Lanny, your friendship is valuable to me. Melissa was not only a fellow in the department of Linguistics at KU but also a really good friend. She not only helped me in my Linguistic classes my first year at KU but also helped me to take care of Yaxun and Lwin in the following years. Melissa thank your for your support and for being a friend, especially a friend of Yaxun and Lwin. Mircea is another friend that I want to thank for his support when I starting working on my qualifying papers and during the time that I was writing the dissertation. Thanks also to Emily and Anne for their support while I was writing the dissertation. I also want to thank Maria Carmen for her support. Maria Carmen, gracias por tu apoyo y por ser ejemplo para mí. Glen White, a friend from the Department of Applied Behavioral Science, gave me good advice while I was working on my dissertation.

I would like to thank my host family Darin and Shannon White from Lawrence, Kansas and my hostfather Lloyd Everson, from Brookings, South Dakota. Lloyd, your support and sponsorship while Ana was studying at South Dakota State University helped us to start with this journey. You are part of this journey, Lloyd. Thanks to the Guatemalan Connection group from Volga, South Dakota for their sponsorship, to Winnie and Phil Backer, Margot, Chirag, Amber, from South Dakota State University, and other people who helped learn English. To our friends Brian and Jenny White, thank you for all your support and friendship.

And finally, a special thanks to my own family, to my wife Ana López de Mateo and to my sons Lwin and Yaxun for being part of this journey. Ana, without you and without your love, encouragement, worries, companionship, and taking care of our two sons, this would not be a reality. Thank you for taking care of our two kids while I was gone doing fieldwork in Guatemala or Mexico. Thank you for helping me with organizing the data into Excel, graphs, and tables. Matiox nute'. Lwin and Yaxun, thank you for not giving up! Thank you for helping out in listening to mom and helping me prepare materials to take to Guatemala for fieldwork. Yuj wal dios ayex cha k'ajol yuj hekolwal yin jun mulnajil ti.

Thanks to my parents, Anixh Lwin and Matin Lwin, who took care of me during my childhood and taught me what I know about Q'anjob'al and alos supported me while working on the project Documenting the Acquisition of Q'anjob'al. Txutx, mam, yuj wal dios ayex yuj hekamk'ulal, yuj hekolwal yin hinkuyoj ti, k'al hinmulnajil ti. Thanks to my siblings for all their support: Malin, Katal, Luic, Humberto, Chico, Ernesto, Matal, and Mario. Hex cha wuxhtaq, hex txo wanab' yuj wal dios yuj hekolwal k'al yuj heb'ilk'ulal max ok wetoq yin hinkuyoj ti. I also want to thank my brothers-in-law Wiliam López, Jorge Enrique, and Diego Adalberto, my

sisters-in-law Dina López and Isabel, and my mother-in-law Victoriana Sipac for their support. To the many people whom I am forgetting to list here, many thanks for your support.

Chapter 1

Introduction

First language acquisition studies have shown that children frequently omit verb inflections between 2;0 and 3;0 years old (e.g. Brown, 1973 for English; Pye, 1980 for K'iche'; Demuth, 2007 for Sesotho; Pfeiler, 2003 for Yucatec; de León, 1999 for Tzotzil; Deen 2002, for Swahili). Structurally based acquisition theories have long relied on Brown's (1973) description of the telegraphic stage of English as a universal feature of child language. Brown's observation has been reformulated as the hypothesis that children initially have access to lexical, but not to functional morphemes. This assumption underlies such prominent acquisition theories as the Agreement/Tense Omission Model (ATOM) (Schütze & Wexler, 1996) and the Truncation Hypothesis (Rizzi, 1993/1994).

A significant weakness of this work has been the lack of acquisition data from languages with rich inflectional systems. Most European languages have simplified inflection systems that limit verbs to a single fused inflection for tense and agreement. These studies have focused on root clauses to assess the acquisition of verb inflection. Data from non-European languages with agglutinative morphology such as K'iche' (Pye 1983), Turkish (Aksu-Koç & Slobin 1985) and Inuktitut (Allen 1994) show that Brown's telegraphic stage does not extend to languages with rich inflection systems.

Researchers like Hamann (2002) and Guasti (2002) have argued that English is not a good language for developing theories of the acquisition of functional categories given that it has an impoverished inflectional morphology. Others like Deen (2002) state that little is known about children acquiring non-European languages. Focusing on well-known European languages leads to conclusions that do not capture universal constraints of child grammar.

Mayan language acquisition studies have also shown that Mayan children omit aspect and agreement, but once again these studies have basically explored verb inflection in indicative clauses. Thus, these studies have not shown what happens with Mayan children's verb inflection in other types of clauses. Few studies have been done in other verb complex constructions. The only studies that I am aware of are the acquisition of antipassive in K'iche' (Pye, 1990), the acquisition of split ergativity in Yucatec (Carillo Carreón, 2007) and the acquisition of split ergativity in Q'anjob'al (Mateo Pedro, to appear).

1.1. The study

The present dissertation centers on how children acquire verb inflection in imperative, indicative, nominalized, and dependent clauses in Q'anjob'al. The study has been motivated by the gap seen cross-linguistically and in Mayan languages in that the acquisition data was explored mainly with declarative clauses. This is the first study that explores the acquisition of the verb inflection in imperative, indicative, nominalized, and dependent clauses in Q'anjob'al.

Exploring the acquisition of verb inflection in four types of clauses not only makes the present study unique within Mayan language acquisition studies but also contributes to a better understanding of the acquisition of the verb inflection in Mayan languages. While the Nominalization Analysis (Mateo Pedro, 2009; Coon, to appear) that I propose for split ergativity and syntactic dependency in Q'anjob'al is problematic, it provides a uniform account of intransitive and transitive verb structure in nominalized clauses. The goal of this research is to answer the following research questions:

i) Do children use imperative, indicative, nominalized, and dependent clauses in Q'anjob'al?

ii) Do Q'anjob'al children follow the verb inflection constraints in each clause type?

iii) What verb forms do these children produce in each type of clauses? Do the children use a default verb form across clause types?

iv) What verb inflections do these children omit?

v) If Q'anjob'al children omit aspect and agreement as in other Mayan languages, do they distinguish the verb inflection for nominalized, imperative, and dependent clauses?

vi) Do Q'anjob'al children violate the constraints on nominalized and dependent contexts as the Auxiliary Complement Hypothesis (Pinker 1984) suggests?

The results of the present study, which is based on longitudinal production data, show that although Q'anjob'al children produced different verb forms, omit prefixes, and overextend status suffixes in non-final position, they distinguished the verb inflection constraints of imperative, indicative, nominalized, and dependent clauses. Thus, while children optionally omit inflections on the verbs in indicative clauses as reported cross-linguistically and also reported in Mayan language acquisition studies, Q'anjob'al children produced distinct verb inflections in imperative, indicative, nominalized, and dependent clauses. These children did not produce a default verb form. Thus, the rich inflectional morphology of Q'anjob'al made it obvious when children used the verb inflections appropriate to each clause type.

Q'anjob'al children produced verb inflections that resemble those produced by children acquiring K'iche', Yucatec, Tzotzil, and Tzeltal. The present study makes further contributions

to current Mayan language acquisition studies by evaluating the productivity of the verb inflections in the four types of clauses.

1.2. Organization of the Dissertation

The dissertation is organized as follows. In chapter 2 I provide an overview of the findings of studies on the verb inflection in four Mayan languages (Yucatec, Tzotzil, Tzeltal, and K'iche'). I further provide a general view of the main focus of these studies and what has been missing from these analyses. I also provide a general overview of the aspects of the Q'anjob'al grammar relevant to the present acquisition study (see Francisco Pascual (2007) and Mateo Toledo (2008) for more details of the Q'anjob'al grammar). In chapter 2 I also provide some brief notes about baby talk and the culture of child rearing in a Q'anjob'al community.

In chapter 3 I discuss two influential theories of first language acquisition (the Truncation Hypothesis and the Complement Verb Hypothesis) and their potential predictions for the acquisition of the verb inflection in Q'anjob'al. I also present predictions for the acquisition of verb inflection in Q'anjob'al made from previous Mayan studies. In chapter 4 I describe the methodology used for data collection, data coding, and the types of analyses applied in the present study. The analyses include a Verb Form Analysis, a Frequency Analysis, a Productivity Analysis, and an Error Analysis.

Chapter 5 describes the acquisition of intransitive verbs in Q'anjob'al, while chapter 6 describes the acquisition of transitive verbs. In each chapter I performed the analyses described in chapter 4. Based on the results from both chapters I argue that while it is true Q'anjob'al children omitted aspect and agreement in indicative clauses as suggested by the findings in other Mayan languages, these children produced verb inflection to distinguish imperative, indicative,

nominalized, and dependent clauses. Furthermore, the results of chapters 5 and 6 show that Q'anjob'al children did not use a default verb form and extend it to other types of clauses as some first language acquisition theories predict.

In chapter 7 I provide a comparison of the acquisition of the inflection of intransitive and transitive verbs. In both types of verbs these children produced bare stems, but they did not use a default form or prevent these children in producing the verb inflection in the types of clauses explored in the present study. Further evidence of the distinction of the verb inflection of intransitive and transitive comes from the nominalization of transitive verbs. When intransitive verbs are nominalized they do not undergo any change. In contrast, when transitive verbs are nominalized, they take the suffix *-on* and instead of taking their transitive status suffixes *-v'/-j*, they take the nominalizing suffix *-i*.

In chapter 8 I compare the Q'anjob'al child data with Q'anjob'al input data. With this comparison I show that the input did not match the child data in Q'anjob'al, therefore the input cannot be responsible for the acquisition of the inflection of intransitive and transitive verbs. Furthermore, while it is true the Q'anjob'al child data do not match the input, we still see that the children's data match among the three children. In chapter 9 I provide my conclusions relevant to my research questions and predictions developed in previous chapters. In this chapter I conclude that while the verb forms that Q'anjob'al children produce resemble child verb forms found in other Mayan languages, the Q'anjob'al children distinguished four inflectional contexts. I also discuss in this chapter issues that remain for future acquisition studies.

Chapter 2

Mayan Acquisition Studies and Q'anjob'al

Introduction

This chapter is divided into three main sections. The first section provides a summary of the acquisition studies in Mayan languages, which includes the main area of research, the findings, and what is lacking from these studies. The second section provides a grammatical sketch of Q'anjob'al. It includes a general discussion of the phonology, stress pattern, lexical classes and inflection (person marking, tense/aspect/mood, and status suffixes). Finally, the third section describes the cultural background, which includes information about cultural practices concerning children acquiring the language and some notes on baby talk in Q'anjob'al.

2.1. Mayan Acquisition Studies

Relatively few studies on the acquisition of Mayan languages exist. Among the 30 Mayan languages spoken in Mexico, Belize, Honduras, and Guatemala (England, 1994), only Yucatec (Carrillo Carreón, 2005; Pfeiler, 2003), Tzotzil (de León, 1999a, 1999b), Tzeltal (Brown, 1998, 2007), and K'iche' (Pye, 1983; 1990, 1991, 1993, 1998, 2002; 2007) have been studied. Until recently the acquisition study of Q'anjob'al has began (Mateo Pedro, 2005, to appear). Currently, a project Documenting Mayan Language Acquisition led by Clifton Pye and funded by the National Science Foundation is documenting the acquisition of Ch'ol of Tila, Chiapas, Mexico; Mam of San Ildefonso Ixtahuacán, and Q'anjob'al of Santa Eulalia, Guatemala. Most studies in Mayan languages are focused on adult grammars. Therefore, the small body of studies on Mayan language acquisition greatly increases the study of non-European languages. First language acquisition studies are focused mostly on well-known languages such as English that may lead to

conclusions that do not capture the general acquisition constraints in all languages (Deen, 2002). As a consequence, theories of first language acquisition are based mostly on accusative languages and not on ergative languages (Carrillo Carreón, 2005).

The present study on the acquisition of the verb morphology in Q'anjob'al contributes not only to studies on Mayan languages but also to other Mayan acquisition studies. Q'anjob'al adds a crucial link to Mayan acquisition studies since Q'anjob'al belongs to a central branch of the Mayan language family. My main goal in this section is to highlight the findings of studies on the acquisition of the verb morphology in the Mayan languages, without discussing the approaches taken in each study. Results on the acquisition of the verb morphology in other Mayan languages provide a solid background for studying the acquisition of the verb morphology in Q'anjob'al. Q'anjob'al children may show patterns that have been seen in acquisition studies on Mayan languages or they may show different patterns.

2.1.1. K'iche'

Pye (1991a, 1993) reports that his three K'iche' subjects, Al Tiya:n (2;1-2;10), Al Cha:y (2;9-3;1), and A Carlos (3;0-3;7) produced part of the verb root plus the status suffix as shown in (1). Verb forms like those in (1) are conditioned by CVC or CV-CVC phonological structure of the verbs. Therefore, K'iche' children start using prefixes that mark aspect and agreement on the verb only when the CVC structure grows (Pye, 1993). The absence of a morpheme is shown by an asterisk (*), overgeneralization is shown by an exclamation point (!), and the equal sign (=) in the second line after the child data represents an adult form.

(1) ek eyub'. Al Tiya:n (2;7.28) (Pye, 2002)[1]
= *x-ø/b'e:-!**ik** *pa juyub'.
COM-A3s/go-IV to mountain
'He went to the mountain.'

Pye (1991a, 2002) explored the acquisition of status suffixes in K'iche' by looking at contexts like those in (2). In (2)a' the status suffix *-ik* is attached to the intransitive verb *wa'* 'eat'; in (2)b' the suffix *-oh* is attached to the transitive verb *tij* 'eat'. Both status suffixes occur only in final position. In contrast, in (2)c' the suffix *-V:j* is attached to the derived transitive verb *cha:k* 'work', which occurs in non-final and final positions. In this study, Pye explored whether K'iche' speaking children follow the constraint of use of the status suffix in non-final and final positions as shown in (2)a'-c'. In K'iche' as well as in other Mayan languages, the status suffix indicates tense/aspect, mood, transitivity, root or derived transitive stems, position of the verb in a clause (Pye, 2002). Pye states that the status suffix in K'iche' and in other Mayan languages is unique given that most ergative languages mark agreement or case, but few of them use status suffixes.

(2) a. ma x-in-wa' taj.
NEG COM-A1s-eat NEG
'I did'nt eat.'

a'. x-in-wa'-**ik**
COM-A1s-eat-IV
'I ate.'

b. wara:l k-ø-in-tij wih
here INC-A3s-E1s-eat LOC
'Here (is where) I eat something.'

b'. k-ø-in-tij-**oh**.
INC-A3s-E1s-eat-RTV
'I eat something.'

c. x-ø-in-cha:k-**o:j** le: ab'i:x
COM-A3s-E1s-work-DTV the field
'I worked the field.'

c'. x-ø-in-cha:k-**o:j**.
COM-A3s-E1s-work-DTV
'I worked something.'

[1] For uniformity, I modified the abbreviations of the data from their sources.

Pye found that K'iche' children acquire the status suffix first, even though they omit prefixes of aspect and agreement (3). In (3)a and (3)b K'iche' children produced the status suffixes correctly, but aspect and agreement are missing. These children did not produce aspect and agreement morphemes until the age of 3;6. Also, these children produced absolutive and ergative morphemes around the same time (Pye, 1990, 1998, 2002).

(3) a. ay, ay, ek. Al Tiya:n (2;1.7) (Pye, 2002)
= *x-ø*/b'e-**ik**.
COM-A3S/go-IV
'Oh, oh, it went.'

b. tijo cha'. Al Cha:y (2;9.3)
= *k-ø-*u/tij-**oh** cha'.
COM-A3s-E3s/eat-RTV say
'He eats it, he says.'

c. kub'i**j**. A Carlos (3;0.14)
= k-ø-u/b'i'-j.
COM-A3s-E3s/name-DTV
'He says it.'

The early acquisition and the higher proportion of use of status suffixes in K'iche' might happen because children assume that all verbs are derived (Pye, 2002) due to the fact that status suffixes in derived transitive verbs remain in final and non-final positions as shown in (2)c and (2)c'. Therefore, these K'iche' children might use status suffixes on root transitive verbs in both non-final and final positions. However, Pye found that K'iche' speaking children made few errors in overextending the status suffix for root verbs from final to non-final position. Some of these errors are shown in (4).

(4) a. ek eyub'. Al Tiya:n (2;7.28) (Pye, 2002)
= *x-ø/b'e:-ɬ**ik** *pa juyub'.
COM-A3s/go-IV to mountain
'He went to the mountain.'

b. no, tijo la. Al Cha:y (3;0.8)
= no, *k-ø-*in/tij-!**oh** la.
no, INC-A3s-E1s/eat-!RTV EMPH
'No, I am eating it.'

c. inch'ob'oh taj. A Carlos (3;1.5)
= *k-ø-in/ch'ob'-!**oh** taj.
INC-A3s-E1s/know-!RTV neg
'I do not know it.'

In addition to the early acquisition of the distribution of the status suffixes in non-final and final positions, Pye (1991b, 2002) found that around the age of 2;0 K'iche' children produced suffixes to mark transitivity as shown in the contrast between (3)a and (3)c above. Some errors of transitivity are shown in (5), in which K'iche' children used the regular status suffix *-oh* instead of the focus antipassive morpheme.

(5) a. no', at oh. Al Tiya:n (2;1.17)
= no', at *x-*at/*ya'-!**ow**-*ik.
no, you COM-A2s/give-FA-IV
'No, you gave it.'

b. jachin ya'oh b'ay chupam? Al Cha:y (3;3.14)
= jachin *x-ø/ya'-!**ow** *le: ab'aj chi-u-pa:m
who COM-A3s/give-FA the rock at-E3s-stomach
'Who put the rock inside it?'

In his study on the acquisition of ergative languages, Pye (1990) found that K'iche' children acquired the ergative system very early at the morphological level (2), but not at the syntactic level (6). An ergative system at the syntactic level is found in wh-questions, relative clauses, and focus constructions. Intransitive subjects and transitive objects can be questioned, relativized, and focused without changing the morphology of the verb, while for a transitive subject, the transitive verb must undergo intransivization (Larsen, 1979; Mondloch, 1981; Mora Marín,

2000; Pye, 1990). In (6) a transitive subject is being questioned, therefore the transitive verb *ya'* 'to give' takes the suffix *-ow* as a result of intransitivization.

(6) jachi:n x-ø-ya'-**ow** le: su't chi-aw-e:ch (Pye, 1990)
who COM-A3s-give-FA the cloth to-E2s-possession
'Who gave the cloth to you?'

Pye found that K'iche' children made few errors of ergative and absolutive morphemes at the morphological level. He also found that K'iche' children sometimes used ergative morphemes to cross-reference subjects of intransitive verbs. Due to the homophone forms of absolutive morphemes with independent pronouns, these children in some cases used independent pronouns instead of ergative morphemes around the age of 3;0. Also, due to the flexible word order in K'iche', these children used subject pronouns in preverbal position. Since these children did not use aspect and agreement morphemes on the verb, their constructions look like an overgeneralization of absolutive morphemes to cross-reference transitive verbs (Pye, 1990). Pye (1993) reports that when K'iche' speaking children start using ergative morphemes they start first with relational nouns, then with nouns as possessor, and finally with verbs as subjects.

At the syntactic level, Pye found that K'iche' children have difficulties in acquiring the ergative system. These children had more difficulties using focus antipassive constructions than antipassive constructions. An example from A Carlos is shown in (7)b, who used an ergative morpheme instead of an absolutive morpheme in an antipassive construction.

(7) a. jawi xak'am wi la awiyon e. adult (Pye, 1990)
where you-get LOC the airplane there
'Where did you get the airplane?

b. ut, at a'aya'-ow-ik (=at ya xatyowik). A Carlos (3;4.2)
You you gave-FA-IV it.
'You gave it to me.'

Another case where children may have difficulties acquiring the ergative system at the syntactic level is in causative constructions (my interpretation). In contrast to relativization, wh-question, and focus construction, where a transitive verb becomes intransitive, in causative constructions an intransitive verb becomes transitive. Pye (1991b, 1993) found that K'iche' children relatively late acquired causative constructions as *in k'at e laya (= chak'at**is**aj le: aradio)* from Al Cha:y (2;10), who did not use the causative affix *-is*. K'iche' children do not start using causative constructions until the age of 2;10.

K'iche' shows a canonical word order VOS. Pye (1991a) found that K'iche' children acquired this word order at an early age even though they produce sentences with flexible word orders around the same age. Some examples of flexible word order are given in (8) from the child Al Tiya:n (Pye, 1991a).

(8) a. axej wi:b' at. VOS (Pye, 1991a)
= x-ø-a#xe'j aw-i:b' at.
scared yourself you
'You scared yourself.'

b. yakom ate le: q'ab'e. VSO
= ø-a#ya-om at le: q'ab'-e.
have got you that hand there
'You have got that hand there.'

c. lah ti tu wakax. SVO
= alah k-ø-u#tij ta u-wakax.
boy eats not his cow
'The boy is not eating his cow.'

2.1.2. Yucatec

Yucatec shows both ergative and split ergative systems. In the ergative system, ergative morphemes cross-reference transitive subjects (9)a, while absolutive morphemes cross-reference intransitive subjects (9)b, but only in completive context. In contrast, the split ergative system is found only in incompletive context as illustrated in (9)c.

(9) a. k- **inw**= il-ik-e**ch**. Completive (Carrillo-Carreón, 2007)
INC E1S see-RTV-A2S
'I see you.'

b. h= lúub-ø-**ech**.
COM fall-IV-A2S
'You fell.'

c. k- **a**= lúub-ul Incompletive
INC E2s fall-NOM
'You fall.'

Pfeiler (2003) studied the acquisition of the verb morphology in Yucatec by looking at data from Sandi, between the age of 1;9.27 and 2;4.4. Pfeiler found that Sandi used two groups of status suffixes based on verb types. With transitive verbs, the child used the imperative/subjunctive *-eh*, the incompletive *-ik*, and the completive *-ah*; while with intransitive verbs, the child used the subjunctive *-Vk*, incompletive *-Vl*, and the completive ø-*ih*. The later suffix (ø-*ih*) is used with third person only. Pfeiler explored her data in two stages: a) age 1;10 as the end of the pre-proto-morphology stage and age 1;10 as the beginning of the proto-morphology stage.

In the pre-proto-morphology stage, Sandi used root verbs plus the status suffix (*-eh*) and bare verb forms without the status suffix. Two types of errors were found in Sandi's data in this stage. First, the subjunctive/imperative suffix *-eh*, which corresponds to the subjunctive/imperative for

transitive verbs is used instead of the suffix *-en* for intransitive verbs. Pfeiler argues that this error can be considered as an underspecification of transitivity at this stage. The second error was the use of the incompletive status *-tal* with the positional intransitive verb *kul* 'sit down' with an imperative meaning.

In the proto-morphology stage, the status suffixes *-ik* in incompletive aspect for transitive verbs and *-Vl* in incompletive aspect for intransitive verbs started to appear, even though bare verb forms still remain. In this stage, the ergative morphemes for first (*in*) and third (*u*) persons also started to appear. Pfeiler concluded that Sandi acquires suffixes before prefixes marked on the verb. She also argued that Sandi relies on memorization when using morphological inflection around the age of 1;9, but after this age, the memorization process disappears and Sandi started using morphological rules with verbs.

Carrillo Carreón (2007) studied the acquisition of the split ergative system in Yucatec. He found that absolutive morphemes were always present compared to ergative morphemes. However, based on Pfeiler's (2003) findings, that in Yucatec children acquire first suffixes than prefixes, it might explain why the other child in Carillo Carreón's study was producing absolutive morphemes always compared to ergative morphemes. In Yucatec, the absolutive morphemes are suffixed to the verb as shown in (9) above. Carillo Carreón's main finding is that there is a delay for the acquisition of the split ergative system in Yucatec; the child that he studied did not acquire such system before the age of 3;0 (Carrillo Carreón, 2007).

2.1.3. Tzotzil

De León (1999a) studied the acquisition of Tzotzil with data from two children, one from the age of 18-24 months and the other, 19-25 months. Tzotzil is a VOS language; it uses the

absolutive morphemes either as prefixes or suffixes (de León, 1999a). Tzotzil has a mixture of features found in Yucatec, K'iche', and Q'anjob'al. We have seen that in Yucatec (Carrillo Carreón, 2007; Pfeiler, 2003), the absolutive morpheme occurs as a suffix, while in K'iche' (Pye, 1983) and Q'anjob'al (Mateo Pedro, 2005, to appear), it occurs as prefix. In Tzotzil, overt first and second person pronouns occur in emphatic constructions.

De León (1999a) found that her two subjects produced CVC bare verb forms similar to Tzeltal (Brown, 1998), but different from K'iche' (Pye, 1983) and Yucatec (Pfeiler, 2003). In Tzeltal, children produce CVC verb forms; in K'iche', children produce part of the verb plus the status suffix; while in Yucatec, children produce both root verbs plus status suffix and bare verb forms. In her study on the early syntactic development in Tzotzil, de León (1999b) found that children start combining the CVC verb forms with aspectual adverbs for completive aspect (*xa*) as in (10). Until later, both children started producing imperative suffixes for transitive verbs.

(10) a. bat **xa**
'gone.'
lit=go already

b. laj **xa**
'finished.'
lit=finished already

In addition, Tzotzil children start using status suffixes to mark transitivity as in K'iche' (Pye, 1983), and they did not make errors on status suffixes, except the ones that have an irregular morphology in the adult grammar (de León, 1999b). According to de León, once children start combining verbs plus suffixes, they start using derivational suffixes such as the causative *-es* (11)a or the benefactive *-be* (11)b.

(11) a. lom-**es**.
'cause to fall.'

b. poj-**be**.
'to steal X from someone.'

(de León, 1999b)

2.1.4. Tzeltal

Tzetal is a VOS language with a free dropping of nominal arguments (Brown, 1998). As in Yucatec, Tzeltal uses the absolutive morpheme as a suffix. Brown studied the acquisition of verbal phrases in Tzeltal by looking at data from two children aged 1;3-2;3 and 1;5-2;5. At an early stage her two subjects produced only CVC bare verb forms as in Tzotzil (de León, 1999a, 1999b). When her two subjects started combining their verbs with inflection, Brown found that the vowel initial ergative morphemes appeared earlier than the consonant initial ergative morphemes. Based on this finding, she argues that the consonant initial ergative morphemes appear late because they are harder to identify in the input than the vowel initial ergative morphemes.

Brown found that her two subjects showed a productive use of absolutive morphemes cross-referencing intransitive verbs and positionals. They also showed a productive use of independent pronouns, even though sometimes they extended these morphemes to possess nouns and cross-reference transitive verbs. Brown assumes that independent pronouns replacing ergative morphemes are to clarify the subject of a verb since the ergative morphemes, especially the ones before consonants, appear late.

Brown (1998, 2007) also reports that Tzeltal children showed early acquisition of benefactive constructions (12). In Tzeltal, the aspect markers are also acquired late (Brown, 1998), even though the incompletive aspect *ya* appears first, but not productively. After the age of 3;0 the incompletive *ya* and the completive *la* are productive.

(12) a. _poj**ben** alal. LUS (2;0) (Brown, 2007)
'(He) steals **me** (my) doll.'

b. _yixnbet laso. XAN (2;2)
'He played with (your) rope for/on you.'

2.1.5 Q'anjob'al

From his cross-sectional data, Mateo Pedro (2005) found that Q'anjob'al children start using verbs plus the status suffixes following a K'iche' pattern. Aspect and agreement appeared late as shown in (13), which is similar to K'iche', Yucatec, Tzoltzil, and Tzeltal.

(13) mana'. CHILD B (2;7) (Mateo Pedro, 2005)
=*max-*ø *hin-man-a'.
COM-A3s E1s-buy-RTV
'I bought it.'

With the same type of data, Mateo Pedro (to appear) studied the acquisition of the split ergative system in Q'anjob'al and found that Q'anjob'al children follow the constraint of split ergativity shown in (14). They used ergative morphemes to cross-reference intransitive subjects in embedded clauses that lack an aspect marker (Mateo-Toledo, 2003). The example in (14) shows that Q'anjob'al children acquire an early distinction between matrix and embedded clauses and that split ergativity occurs in an embedded clause in Q'anjob'al. In (14), the matrix clause *watx'* takes the verbal form *kokuyi* as its complement even though the Q'anjob'al child did not use the morpheme *-w* or *-on* before the transitive verb taking the suffix *-i*. Mateo Pedro's finding (to appear) is different from Carrillo Carreón's (2007) finding that Yucatec children do not acquire the split ergative system until the age of 3;0.

(14) wak kokuyi. CHILD N (2;3) (Mateo Pedro, to appear)
= watx' **ko**-kuy-*w/*on-i
good E1p-study-INTR-NOM
'It is good for us to study (it).'

2.1.6 Comparative Studies in Mayan Languages

From a comparative approach, Pye, Pfeiler, de León, Brown, and Mateo Pedro (2007) found that K'iche', Yucatec, Tzotzil, Tzeltal, and Q'anjob'al speaking children produced suffixes at an early age compared to prefixes. More recently, Pye, Pfeiler, and Mateo Pedro (2008) studied the acquisition of the suffixes *-ïk* and *-Vk* in K'iche', Yucatec, and Q'anjob'al and found that children in these languages distinguish indicative contexts (15) from other types of contexts, e.g. nominalized contexts. Pye, Pfeiler, Mateo Pedro, and Carrillo Carreón (2008) found that children acquiring K'iche', Yucatec, and Q'anjob'al used a variety of verb forms in indicative, nominalized, and dependent contexts. However, what is missing in the later study is an explanation of why Mayan children produce a variety of verb forms in these three contexts. My study on the acquisition of verb complex constructions in Q'anjob'al will follow the methods applied in the recent comparative studies and find possible answers to the variety of those verbs forms.

(15)	a.	ik. = *k-ø-*wa'-**ik** INC-A3s-eat-IV 'S/he eats.'	(TIY 2;0)	K'iche'	(Pye, 2008)
	b.	cheli. = ch-ø-'el-**i** INC-A3s-leave-IV 'S/he/it leaves.'	(XHIM 2;3)	Q'anjob'al	
	c.	eem-ih = *h eem-**ih**-ø COM descend-IV-A3S 'He went down.'	(ARM 2;0)	Yucatec	

2.1.7. Summary

In summary, studies on the acquisition of the verbal morphology in Mayan languages have focused on the inflectional and derivational morphology marked on the verb as shown in the template in (16) (Pye, Pfeiler, de León, Brown, & Mateo Pedro, 2007).

(16) Mayan Verb Template

ASPECT+ABSOLUTIVE$_1$+ERGATIVE+**[VERB]**_STEM+STATUS+ABSOLUTIVE

LEFT EDGE — RIGHT EDGE

← ACQUISITION

These studies show that Mayan children start producing inflectional and derivational morphology found at the right edge of the verb as shown in (16), and later on they produce what appears at the left edge. In K'iche (Pye, 1983), children produced part of the verb root plus the status suffix to mark transitivity. Q'anjob'al children follow the K'iche' pattern by producing the verb root plus the status suffix (Mateo Pedro, 2005). In contrast, in Tzotzil (de León, 1999a, 1999b) and Tzeltal (Brown, 1998) children produced CVC bare verb forms, and later on they produced status suffixes to mark transitivity. Children acquiring Yucatec showed a mixture of CVC bare verb forms and verbs plus status suffix (Pfeiler, 2003). Children acquiring K'iche' and Q'anjob'al showed few errors of using status suffix to mark transitivity; most of their errors derive from overextending the status suffix from final position to non-final position. In contrast, children acquiring Yucatec and Tzotzil made transitivity errors in using the status suffix. Compared to K'iche', Tzotzil and Tzeltal children acquired causative or applicative constructions at a very early age.

Aspect and agreement found at the left edge of the verb (16) appeared late. However, when these morphemes appear, Mayan children use them correctly. In K'iche' (Pye, 1990) for example, children did not overextend ergative morphemes to absolutive morphemes or vice versa. Similar results are found in Yucatec (Pfeiler, 2003), Tzotzil (de León, 1999b), Tzeltal (Brown, 1998), and Q'anjob'al (Mateo Pedro, 2005).

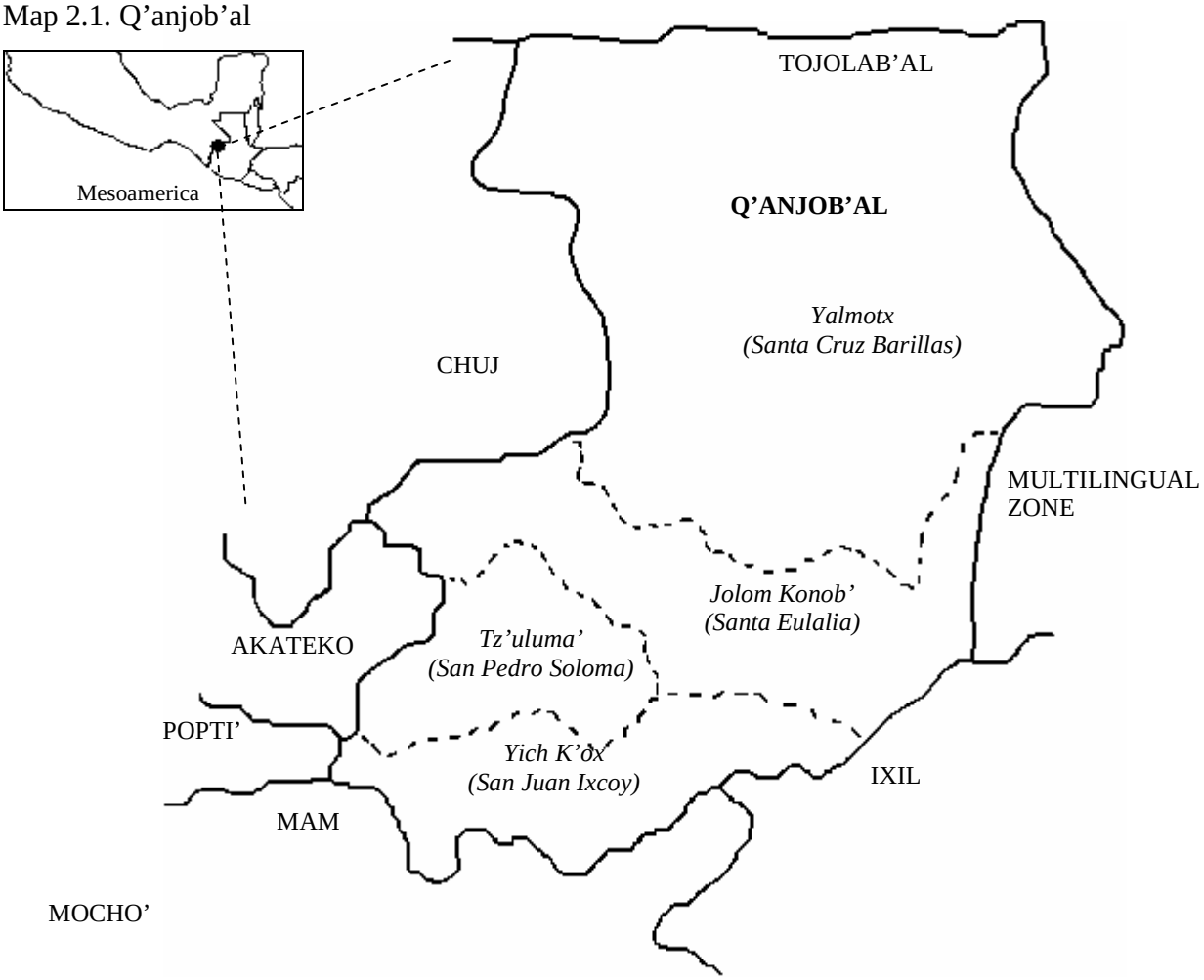
Two noteworthy findings in these languages need to be mentioned. In K'iche' (Pye, 1990) and Tzeltal (Brown, 1998) in some cases children use independent pronouns instead of ergative morphemes to cross-reference transitive subjects. Such findings have not been reported in Yucatec, Tzotzil, or Q'anjob'al. In contrast, in Tzotzil (de León, 1999a), even though children did not produce a morpheme of aspect, they used aspectual adverbs to mark completive aspect. The finding in Tzotzil raises the question of what kind of lexical items Mayan children use to express verbal inflections.

2.2. Q'anjob'al

Q'anjob'al is an ergative language that belongs to the Q'anjob'alan branch of the Mayan language family (Kaufman, 1974). Even though reports on the number of speakers of Q'anjob'al vary (Mateo Toledo, 2008), researchers such as Richards (2003) reports that this language is spoken by approximately 99,211 speakers in the communities of San Juan Ixcoy, San Pedro Soloma, Santa Cruz Barillas, and Santa Eulalia in the department of Huehuetenango, northwestern region of Guatemala. However, thousands more speakers have emigrated to the southern part of Mexico, the United States, and Canada (Peñalosa, 1992). The Q'anjob'al language is located in the nouthern part of Guatemala and surrounded by the Mayan languages

Chuj, Akateko, Ixil, and Mam (Mateo Toledo, 2008a) as shown in Map 2.1 (Francisco Pascual, 2007).[2]

Map 2.1. Q'anjob'al



2.2.1. Phonology

The phonology of Q'anjob'al is shown in Table 2.1. In my data I use the practical orthography of Q'anjob'al used by the Comunidad Linguistica Q'anjob'al of the Academia de las Lenguas Mayas de Guatemala (Acuerdo Gubernativo 1046-87). The practical orthography is highly phonemic (Mateo Toledo, 2008), except for the following symbols: tz = [ts], ch = [tʃ], tx =

[2] Thanks to Adán Francisco Pascual for letting me use his map of Q'anjob'al.

[tş], b = [ɓ], xh [ʃ],x = [ş], j = [x]. The sound /h/[3] has different functions such as avoiding vowel clusters or diphthongs (Mateo Toledo, 1998). Children included in my study sometimes produced /q/ as a uvular fricative, which I represent as /X/ in my examples.

Table 2.1. Phonology of Q'anjob'al

Consonants

p	t	tz	ch	k	tx	q	
b'	t'	tz'	ch'	k'	tx'	q'	'
m	n						
	s		xh		x	j	h
	l						
w	r		y				

Vowels

i		u
e		o
	a	

2.2.2. Stress

Mateo Toledo (2008a) states that words in final phrase position bear stress on the final syllable and words in non-final phrase bear stress on the first syllable as shown in (17). Spaces indicate phonological boundaries, stressed syllables are in bold and underlined, and periods indicate syllable boundaries (Mateo Toledo, 2008a). The data in (17) show that the stress pattern can switch depending on the position of the verb in a clause.

(17) a. /a naq **<u>ma</u>**.tin max ko.ko.**<u>lo'</u>**/
a naq Matin max-ø ko-kol-o'.
FOC CL Matin COM-A3s E1P-help-RTV
'It was Matin whom we helped.'

b. /**<u>xko</u>**.kol naq ma.**<u>tin</u>**/
x-ø-ko-kol naq Matin
COM-A3s-E1P-help CL Matin
'We helped Matin.'

[3] This sound requires further phonetic and phonological study.

2.2.3. Lexical Classes and Inflection

The main lexical classes in Q'anjob'al are verb, positional, noun, adjective, and relational nouns.

2.2.3.1. Verbs

Verbs have the following features. First, they are classified as intransitive or transitive. Intransitive verbs take only one argument, the absolutive 0(18)a, while a transitive verbs take two arguments, absolutive and ergative (18)0b.

(18) a. max-**ach** way-i.
COM-A2s sleep-IV
'You slept.'

b. max-**ach** **y**-il-a'.
COM-A3s E3s-see-RTV
'S/he saw you.'

Second, verbs are distinguished based on their phonological shape. Verbs that have the phonological shape CVC are considered verb roots (19)a, while verbs that have a different phonological shape are considered non-root verbs (19)b. The status suffix distinguishes root verbs from non-root verbs as shown in (19). See the section on status suffixes for further detail. Third, the initial sound of the verb, which is also true for nouns and relational nouns, conditions the form of the ergative morpheme. See Table 2.2 for the ergative morphemes.

(19) a. max-ach y-il-**a'**.
COM-A2s E3s-see-RTV
'S/he saw you.'

b. max-ach s-way-tzene-**j**.
INC-A2s E3s-sleep-CAU-DTV
'S/he made you sleep.'

2.2.3.2. Positional Roots

Positional roots indicate features like posture, trajectory, and form (Mateo Toledo, 2008a; Raymundo González, et. al., 2000). Mateo Toledo (2008a) states that there are about 700 positional roots in Q'anjob'al. Based on aspectual tests, he states that positional roots are states and not events. Some examples of positionals in Q'anjob'al taken from Mateo Toledo (1999) are shown in (20). Positional roots have the phonological shape CVC and take the suffix *-an*.

(20) Positionals in Q'anjob'al
a. chot-**an** seated
c. paq-**an** upside down
d. tel-**an** laid down

Mayan languages have a distinctive existential verb. In contrast to other Mayan languages such as K'iche' where the existential verb *k'o* 'there is/are' remains in affirmative and negative contexts (21) (Pye, p.c.), the existential verb *ay* in Q'anjob'al surfaces only in affirmative forms (22)a, but not in negative contexts (22)b. In negative contexts, *ay* is replaced by *k'am* (Mateo Toledo, 2008).

(21) a. **k'o**-ø jaab'. K'iche' (Pye, p.c.)
EXST-A3s rain
'There is rain/it's raining.'

b. n-**k'o**- ø ta jaab'.
NEG-EXST-A3s IRR rain
'There is no rain/it's not raining.'

(22) a. **ay**-ø nab'. Q'anjob'al (Mateo Toledo, 2008)
EXST-A3s rain
'There is rain/it's raining.'

b. **k'am**-ø nab'
NEG-EXST-A3s rain
'There is no rain/it's not raining.'

2.2.3.3. Person Marking

Inflection is conditioned by lexical class. Person marking in Q'anjob'al is shown by ergative and absolutive morphemes as show in Table 2.2 above. In contrast to absolutive morphemes, ergative morphemes have two sets of allomorphs which are condition by the initial sound of the noun, verb, or relational noun. Ergative morphemes mark transitive subjects in simple clauses (23)a; possession (23)b, complements of relational nouns (23)c (Mateo Toledo, 2008a) and the subject of nominalized verbs in complement clauses that lack aspect marking (23)d (Mateo Pedro, 2009, to appear). Relational nouns indicate the relation of an oblique noun phrase or location, where location is a metaphorical extension of parts of the human body (Pye, 1991a). For example, *txikin* 'ear' functions as a relational noun when taking an ergative morpheme *s-txikin* to indicate location 'corner' (23)c.

(23) a. max-ach **s**-kol-o'. Transitive subject
COM-A2s E3s-see-RTV
'S/he helped you.'

b. no' **s**-mis. Possessor
CL E3s-cat
'His/her cat.'

c. **s**-txikin te' na. Complement of Relational Noun
E3s-ear CL house
'The corner of the house.'

d. lanan [**s**-way-i]. Subject of Nominalized Verb
PROG E3s-sleep-IV
'S/he is sleeping.'

Table 2.2. Ergative and Absolutive Morphemes in Q'anjob'al

Ergative		Absolutive	Person/number
V-initial	C-initial		
w-	hin-	-in	1person singular
ø-	ha-	-ach	2person singular
y-	ø-	-ø	3person singular
j-	ko-	-on	1person plural (dual)
j-… hon	ko-… hon	-on… hon	1person plural (excl)
j-… heq	ko-… heq	-on… heq	1 person plural (incl)
hey-	he-	-ex	2person plural
y-… heb'	ø-… heb'	-ø… heb'	3person plural

It is worth noting that some ergative morphemes have gone through historical changes. The ergative morpheme for second person singular *aaw- (Kaufman, 1974) is not audible anymore in Q'anjob'al. In studies of Q'anjob'al, this morpheme is represented as /*h*/. However, languages of the Q'anjob'al branch such as Popti', Akateko and languages of other branches such as the K'iche'an branch maintain the Proto-Mayan morpheme *aw*-. In the Q'anjob'al of Santa Eulalia the absence of *aw*- creates a vowel change; the initial vowel of a verb, noun, or relational noun changes from [+high] to [-high] as in (24)c. In other dialects of Q'anjob'al there is no vowel change caused by the absence of *aw*-. The data in (24) illustrate the overt and covert form of the ergative morpheme for second person before vowel. In (24)a the morpheme in Popti' is marked overtly; in (24)b the ergative morpheme in the Q'anjob'al of Soloma and Ixcoy is marked covertly but with no vowel change on the verb; but in (24)c the ergative in Santa Eulalia and Barillas is marked covertly and vowel change occurs.

(24) a. ma in aw-il an. Popti' (Ross Montejo, 2000)
COM A1s E2s-see ENCL
'You saw me.'

b. x-in h-il-a'. Soloma/Ixcoy (Mateo Toledo, 1999)
COM-A1s E2s-see-RTV
'You saw me.'

c. x-in h-el-a' Santa Eulalia/Barillas (Mateo Toledo, 1999)
COM-A1s E2s-see-RTV
'You saw me.'

Absolutive morphemes cross-reference transitive objects (25)a, intransitive subjects (25)b, and subjects of non-verbal predicates (NVP) (25)c. In contrast to ergative morphemes, absolutive morphemes attach loosely to the head that they cross-reference such as in the case of (25)c or objects of transitive imperatives. This fact shows that absolutive morphemes are clitics (Woolford, 2000) and susceptible to movement.

(25) a. max-**ach** **w**-il-a'.
COM-A2s E1s-see-RTV
'I saw you.'

b. max-**ach** way-i.
COM-A2s sleep-IV
'You slept.'

c. winaq **hach**.
man A2s
'You are a man.'

Mateo Toledo (2008) states that as long as an appropriate context exists, a noun, adjective, positional, existential, adverb, number, and some particles can function as non-verbal predicates. More examples of non-verbal predicates are shown in (26) (Mateo Toledo, 2008).

(26) a. jelan hex. Adjective head
smart A2P
'You all are smart.'

b. yekal hon-on. Adverb head
tomorrow A1P-EXCL
'Our turn is tomorrow (but not yours).'

c. ay-ø ilya ko-xol. Existential head
EXST-A3s sickness E1P-among
'There is sickness among us.'

2.2.4. Verb Template

In addition to person marking, verbs take aspect and mood marking and status suffixes following the template in (27).

(27) aspect + absolutive (+ movement) + (erg) + stem (+ derivation) (+status suffix)

The template in (27) shows that some inflectional and derivational morphemes are optional, which are shown in parenthesis. Only transitive verbs take ergative morphemes to cross-reference their subject in simple clauses (23)a. Derivation is also optional, indicating the phonological shape and the source of the verb, for example if the verb comes from a different word class. Verb roots have the phonological structure CVC, while non-root verbs differ from CVC. Status suffixes vary according to complement type, transitivity, whether the verb is root or non-root, and the position of the verb in a clause (Mateo Pedro, 2005, to appear).

2.2.4.1 Aspect and Mood

Three aspects are marked in Q'anjob'al: *ch-* incompletive (28)a, *max-* completive (28)b, and *hoq-* potential (28)c, which were originally clitics, but have become part of the inflection marked on the verb (Mateo Toledo, 2008). According to Mateo Toledo, the incompletive aspect marks a

generic, habitual, or an event in progress; the completive aspect marks a complete event; and the potential aspect marks an unrealized event.

(28) a. **ch**-ach w-il-a'.
INC-A2s E1s-see-RTV
'I see you.'

b. **max**-ach w-il-a'.
COM-A2s E1s-see-RTV
'I saw you.'

c. **hoq**-ach w-il-a'.
COM-A2s E1s-see-RTV
'I will see you.'

Mateo Toledo also states that some verbs in Q'anjob'al are zero marked (29), which have an interpretation of past tense and not aspect. Zero marked verbs appeared in independent clauses and they are compatible with past time adverbs.

(29) ø hach jay jun-ab'-i. (Mateo Toledo, 2008)
PAST A2s come one-year-ADV
'You came here last year.'

2.2.4.2 Status Suffixes

Status suffixes vary according to complement type, transitivity, whether the verb is root or non-root, and the position of the verb in a clause. Transitive verbs are considered root when they have the phonological shape CVC; and non-root if they have a different phonological shape than CVC. Transitive verbs take *-V'* and *-j* as their status suffixes. In (30), root transitive verbs take the status suffix *-V'*, while in (31), non-root transitive verbs take *-j*. In this respect, transitive verbs select their status suffixes in accordance with whether they are root or non-root. The status

suffix *-V'* occurs in final position (30)a, but not in non-final position (30)b; when it appears in non-final position (30)c, it is ungrammatical. The status suffix *-j* occurs in final (31)a and non-final positions (31)b; when it is not in non-final position, it is ungrammatical (31)c.

(30) a. max-ach y-il-**a'**.
COM-A2s E3s-see-RTV
'S/he saw you.'

b. max-ach y-il ewi.
COM-A2s E3s-see yesterday
'S/he saw you yesterday.'

c. *max-ach y-il-**a'** ewi.
COM-A2s E3s-see yesterday
'S/he saw you yesterday.'

(31) a. ch-ach hin-way-tzene-**j**.
INC-A2s E1s-sleep-CAU-DTV
'I make you sleep.'

b. ch-ach hin-way-tzene-**j** yekal.
INC-A2s E1s-sleep-CAU-DTV tomorrow
'I will make you sleep tomorrow.'

c. *ch-ach hin-way-tzene yekal.
INC-A2s E1s-sleep-CAU tomorrow
'I will make you sleep tomorrow.'

The status suffix of root transitive verbs *-v'* captures the morpho-phonological process shown in the short list of root transitive verbs in (32). Root transitive verbs that contain the vowels /*a, o, u*/ have vowel harmony in the status suffix. The vowel of the root transitive verb is copied as the status suffix by adding the glottal stop, while the form *-a'* surfaces only with root transitive verbs that contain the vowels /*i, e*/ (Mateo Toledo, 1999).

(32) Root transitive verbs and status suffix.

maq'-a'	'hit'	*t'un-u'*	'carry'
aq'-a'	'give'	*sik'-a'*	'pick up'
man-a'	'buy'	*xiq-a'*	'cut'
jaq-a'	'open'	*il-a'*	'see'
kol-o'	'help'	*ten-a'*	'touch'
txon-o'	'sell'	*b'eq-a'*	'let'
muq-u'	'bury'	*k'ex-a'*	'change'

Intransitive verbs take the status suffix *-i*, in final position (33)b, but not in non-final position (33)b. When the status suffix appears in non-final position it is ungrammatical (33)c.

(33) a. max-ach way-**i**.
COM-A2s sleep-IV
'You slept.'

b. max-ach way b'ay tx'at.
COM-A2s sleep PRE bed
'You slept on the bed.'

c. *max-ach way-**i** b'ay tx'at.
COM-A2s sleep-IV PRE bed
'You slept on the bed.'

2.2.5. Imperative

According to Mateo Toledo (2008a), imperative verb forms in Q'anjob'al show the following features. The verb does not take an aspect marker as shown in the contrast in (34). In (34)a, the verb does not take aspect marking; intransitive verbs take the suffix *-an* to mark the imperative. Using aspect marking in an imperative form is ungrammatical as shown in (34)b. Only absolutive arguments are marked on the verb, and ergative arguments are omitted (34)c.

(34) a. way-an.
sleep-IMP
'Sleep!'

b *ch-way-an.
INC-sleep-IMP
'Sleep!'

c. kol-in!
help-A1s
'Help me!'

2.2.6. Q'anjob'al as a Mixed Pro-drop Language

In Q'anjob'al the absolutive and ergative morphemes are found on the verb cross-reference lexical NPs in the sentence as illustrated in (35). The absolutive morpheme *-ø* cross-references *an pajich* 'the tomato' as the object of the transitive verb *man* 'to buy'; while the ergative morpheme *s-* cross-references *ix unin* 'the girl' as the transitive subject of the same verb. (35)a shows the rigid VSO word order for transitive clauses, while (35)b shows a VS word order for intransitive clauses (Eladio Mateo Toledo, 2008a).

(35) a. max-**ø** **s**-man ix unin an pajich.
COM-A3s E3s-buy CL child CL tomato
'The girl bought the tomato.'

b. max-**ø** way ix unin.
COM-A3s sleep CL child
'The girl slept.

However, lexical NPs as arguments and the rigid VS(O) word order occur only with third person arguments as shown in (35) above. Overt first and second person pronouns occur only in focus constructions as shown in the contrast between (36)a and (36)b. (36)b shows that the

independent pronoun *ayach* does not replace the argument, but it refers to it in the complement clause. The data in (35) and (36) show that Q'anjob'al is a mixed pro-drop language. It is a non-pro-drop language with third person arguments (35), but a pro-drop language with first and second person arguments as in (36).

(36) a. max-**ach** way-i.
COM-A2s sleep-IV
'You slept.'

b. **ayach**$_i$ max-**ach**$_i$ way-i.
you COM-A2s sleep-IV
'It was you who slept.'

2.2.7. Classifier System

The classifier system in Q'anjob'al is considered an innovation (England, 1994; Kaufman, 1974). The classifier system originally came from nouns that have become clitics to form a paradigm of classifiers (Zavala, 1992). In the process of grammaticalization, some classifiers underwent phonological reductions such as *naq* for human beings which derives from *winaq* 'man' and *te'* for non-human beings which derives from *te'ej* 'wood'. Other noun classifiers maintain their original forms (Mateo Toledo, 1999). There are fourteen noun classes that can be classified into two main groups: a) human beings and personified entities; and b) non-human entities. The first group provides information about gender, age, and social status. The second group provides information about a noun in terms of its physical properties such as substance, origin, etc. In Table 2.3 I provide the classifier system of Q'anjob'al (Mateo Toledo, 2008a; Raymundo González, et. al, 2000; and Zavala, 1992).

Table 2.3 Classifier System in Q'anjob'al

Source	Noun class	Meaning
ix	ix	female
winaq	naq	male
xal	xal	respected female, old lady, and personified entities
icham	cham	respected male, old man, and personified entities
te'ej	te(')	trees, wooden items, and fruits from trees
no(')	no(')	animals and derived products
ch'enej	ch'en	stone and things of metal
tx'anej	tx'an	items derived from fiber of maguey
q'aq'ej	q'a(')	fire
atz'am	tz'am	salt
tx'otx'ej	tx'otx'	land, items made of clay or soil
a'ej	ha	water or certain liquids
ak'un	an	plants, clothes, and fruit of plants
ixim	ixim	corn, or food derived from corn

Classifiers are clitics in pre-nominal position, can substitute for the noun phrase that they refer to, and can be used only with the third person (Craig, 1977; Zavala, 1992). In (37) *naq* and *no'* function as pronouns; *naq* refers to a male noun and *no'* to an animal or animal product.

(37) max-ø s-man **naq** **no'**. (Mateo Toledo, 2008a)
COM-A3s E3s-buy CL CL
'He bought it [animal].'

2.3. Complementation Hypothesis

In this section I discuss the indicative, nominalized, and dependent clauses that can be captured by the Complementation Hypothesis. The Complementation Hypothesis is drawn from a comparative and historical perspective. I show that complementation and intransitivization are widespread across Mayan languages, which is not only seen in Q'anjob'al.

The Complementation Hypothesis is drived from a comparative and historical perspective. This hypothesis argues for the interaction of two types of clauses: matrix and embedded (Mateo Toledo, 2008; Pye, 2008; Pye, Pfeiler, & Mateo Pedro, 2009). The matrix clause that indicates

finiteness appears in a higher position and is conformed by a stative and an absolutive morpheme (England, 1983; Mateo Toledo, 2008; Pye, 2008; Quesada, 1997). In contrast, a complement clause appears in a lower position and its morphology is conditioned by the semantics of the stative found in the finite clause. As a result, a finite clause takes a complement verb that can be indicative, nominalized, or dependent. In other Mayan languages, e.g. Tojolab'al, Aguacatec, K'iche', Kaqchikel, Poqom, Tzeltal, and Q'eqchi', the higher predicate can be a progressive or a verb (Robertson, 1992), which can correspond to fronted adverbials (Larsen, 1979). See Mora Mora's (2000) footnote 26. Mora (2000) and Kaufman (1990) have shown that higher predicates are not always verbs as in the example from K'iche' in (38)a. Mateo Toledo (2008) has made similar arguments for Q'anjob'al suggesting that non-verbal predicates are cross-referenced by absolutive morphemes and indicates finiteness (38)b.

As a consequence, a finite clause can take a complement that can be indicative, nominalized, or dependent. I propose the nominalized complement in Q'anjob'al by comparing data from other Mayan languages that show similar patterns of nominalization. The Nominalization Hypothesis suggests that intransitive and transitive verbs have different forms of nominalization in Q'anjob'al. I argue that nominalized and dependent complements in Q'anjob'al follow the intransitivization constraint found in Mayan languages. Other contexts of intransitivization are found in embedded clauses such as *wh*-question, relativization, negation, and focus. Based on these intransitivization constraints, I argue that Q'anjob'al is an ergative language morphologically and syntactically.

(38) a. ø-k'ax u-b'aan-iik. K'iche' (Mora, 2000)
A3s-hard E3s-do-NOM
'It is hard to do (it).'

b. xiwil hex. Q'anjob'al (Mateo Toledo, 2008)
many A2p
'You (all) are many.'

More recently, Coon (2010) argues that in Ch'ol the aspectual predicates *mi* and *choñkol* appear as higher clauses and both are responsible for nominalization. Progressive constructions in Q'anjob'al are the result of the grammaticalization between a stative predicate and an embedded complement clause (Quesada, 1997). Similar cases of grammaticalization have been reported in other Mayan languages. In the K'iche' dialect of Santa Cruz, *tajin* 'in progress' appears only as a particle and does not take the aspectual marker *yoj* (England, 1994). Aissen (1994) reports that in Tzotzil, auxiliary constructions are highly grammaticalized, where aspect is marked on the auxiliary and agreement on the main verb. The grammaticalization process may be true for Q'anjob'al as Mateo Toledo (2008) has argued for the grammaticalization of tense/aspect in Q'anjob'al. Robertson (1992) makes similar claims for other Mayan languages as well as Bricker (1981) for Yucatec. Robertson (1992) argues that the process of grammaticalization is seen from less advanced to more advanced levels. He proposes K'iche' as the least-changed language and Yucatec as the more advance-changed language (Bricker, 1981). Based on Robertson's observation, I suggest that Q'anjob'al is in the middle of the degree of grammaticalization as shown in the contrast between *lanan* 'in progress' (40)a and *uj* 'can' (40)b. In (40)a, it is not clear whether *lanan* takes an absolutive morpheme because it occurs only with third person, which is a covert morpheme. In contrast, the intransitive verb *uj* takes tense/aspect, absolutive agreement, and status suffix as shown in (39)b.

(39) a. lanan-ø he-way-i.
PROG-A3s E2p-sleep-NOM
'You (all) are sleeping.

b. chi-ø uj he-way-i.
INC-A3s can E2s-sleep-IV
'You (all) can sleep.'

However, even though absolutive agreement is not transparent with *lanan*, the progressive still conditions split ergativity (40)a and syntactic dependency (Francisco Pascual, 2007; Eladio Mateo Toledo, 2008) or the crazy antipassive (40)b (Kaufman, 1990) in Q'anjob'al.

(40) a. lanan-ø **he**-way-i.
PROG-A3s E2p-sleep-NOM
'You (all) are sleeping.

b. lanan-ø hey-il-on-i.
INC-A3s E2p-see-INTR-NOM
'You (all) are watching it.'

2.3.1. Finiteness in Q'anjob'al

Mateo Toledo (2008) argues that finiteness in Q'anjob'al is problematic given that finiteness is traditionally defined in relation to tense, aspect, mood and person marked on the verb. Therefore he suggests that the finiteness of a clause should be defined in terms of morpho-syntactic features, clause types, and the distribution of clauses. In the study of Mayan languages 'finite' is not used, but 'aspectless clause' is used instead (Craig, 1977; Mateo Toledo, 2008; Pye, Pfeiler, & Mateo Pedro, 2009). In languages like Spanish for example, a non-finite verb form serves at the citation form, but not in Q'anjob'al. However, a Q'anjob'al dictionary (De

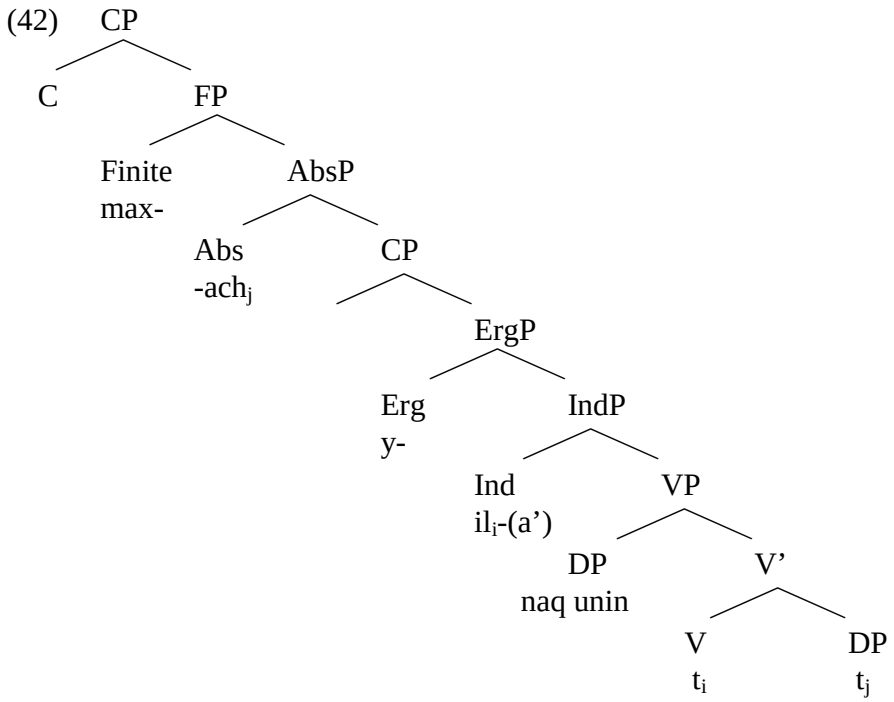
Diego Antonio, 1996) uses a citation form for Q'anjob'al that consists of the verb root plus the status suffix, not including tense/aspect or agreement.

In defining finiteness in Q'anjob'al, Mateo Toledo (2008) argues that non-verbal predicates are finite (41), even though they only take an absolutive agreement. Then, (41) shows that aspect marking is not the sole criteria for defining finiteness in Q'anjob'al.

(41) xiwil hex. Q'anjob'al (Mateo Toledo, 2008)
many A2p
'You (all) are many.'

Following Pye (2008), Mateo Toledo, 2008, and Woolford, 2000, I suggest that a stative and an absolutive morpheme indicate finiteness in Q'anjob'al (Larsen, 1979; Mora, 2000; Pye, 2008; Quesada, 1997). Then, a matrix clause is truly finite as it has been argued for Q'anjob'al (Mateo Toledo, 2008) or for Ch'ol (Coon, to appear) and takes its own absolutive argument (Mateo Toledo, 2008; Pye, 2008). Arguing that the absolutive argument appears in its own clause in a higher position fits in Mateo Toledo's (2003) reanalysis for split ergativity in Q'anjob'al as well as Craig's (1977) argument that manner adverbial sentences appear in a higher clause in Jacaltec. Assuming that the finite matrix clauses in higher position always take their own absolutive argument, the hypothesis implies that intransitive subjects and transitive objects must be always in the matrix clause in higher position as suggested by England (1983) for Mam (footnote 10), and also by Woolford (2000) for Jacaltec. Following Woolford (2000), Pinker (1984), and Pye (2002) I propose the tree structure in (42) to capture the three complement types in Q'anjob'al.

(42)



The Finite Phrase captures the idea of a stative constraint on the morphology of its verb complement: indicative, nominalized, or dependent. Indicative complements are conditioned by the incompletive (*ch-*) and completive (*max-*) aspects. Nominalized complements are conditioned by aspectual verbs, e.g. *lanan* 'in progress', *uj* 'can' or aspectual adverbs, e.g. *k'ojank'ulal* 'slowly', *yob'* 'bad'. Dependent complements are conditioned by contexts like negation (Pye, Pfeiler, & Mateo Pedro, 2008). In the tree structure in (42), I assume that the absolutive morpheme is attached to the Finite Phrase as its own argument, while the ergative morpheme is optionally prefixed to the verb in a lower clause. I suggest the use of Indicative, Nominal, or Dependent Phrases. The Indicative Phrase captures transitivity; the Nominal Phrase captures the nominalizing suffix *-i* and the change of valence of transitive verbs before nominalization; and the Dependent Phrase captures the use of the suffixes *-oq* marked on root and derived intransitive verbs.

2.3.2. Complement Types in Q'anjob'al

In this section I describe indicative, nominalized, and dependent clauses in Q'anjob'al. I show that nominalized and dependent complements are sensitive to the intransitivization constraint. I also show that intransitive and transitive verbs are sensitive to nominalization (Bricker, 1981), with the difference that transitive verbs undergo intransitivization before nominalization. Then, transitive verbs in nominalized contexts are really intransitive and not only low in transitivity as Quesada (1997) suggests.

2.3.2.1 Indicative Complement

The indicative complement is conditioned by the incompletive *ch-* and completive *max-* statives (43). The incompletive *ch-* (43)a and completive *max-* (43)b take the absolutive morpheme as their argument. An indicative intransitive complement with the incompletive and completive does not take absolutive argument given that it appears with the aspect marking in the higher clause. Therefore, the indicative intransitive complement takes the indicative suffix *-i* (43)a. In contrast, a transitive complement takes an ergative argument and the indicative transitive suffixes *-v'/-j* 0(43)b. In this type of complement, the intransitive subject appears in a higher clause as well as the transitive object, and both take an absolutive morpheme as their argument.

(43) a. max-ach [way-**i**].
COM-A2s sleep-IV
'You slept.'

b. ch-ach [**hin**-tayne-**j**].
INC-A2s E1s-take care of-DTV
'I take care of you.'

To close this section, I show the specific morphology of intransitive and intransitive verbs in the indicative complement in Q'anjob'al (Table 2.4).

Table 2.4 Indicative Context in Q'anjob'al

Features	IVs	TVs
Aspect	+	+
Absolutive	+	+
Ergative	-	+
Status suffix *-i*	+	-
Status suffix *-V'/-j*	-	+

2.3.2.2. Nominalized Complement

Before showing that both intransitive and transitive verbs are sensitive to nominalization in Q'anjob'al, I discuss studies on split ergativity and syntactic dependency (Francisco Pascual, 2007; Mateo Toledo, 2008) or the crazy antipassive (Kaufman, 1990) in Q'anjob'al. In Table 2.5, I provide a summary of the type of verbs that have been considered for split ergativity in Mayan languages. The summary in Table 2.5 reveals that studies on split ergativity in Mayan languages include mainly intransitive verbs, with the exception of Jacaltec (Craig, 1977), Mopan (Larsen, 1990), and Chuj (Maxwell, 1976), where both transitive and intransitive are included for split ergativity. Furthermore, in Jacaltect (Craig, 1977) and Chuj (Maxwell, 1976) intransitive and transitive verbs have been considered under the split ergative analysis, while in Mopan (Larsen, 1979), Yucatec (Bricker, 1981), intransitive and transitive have been considered under the nominalization analysis. Others have considered transitive verbs in contexts of split ergativity in Jacaltec, Mopan, and Chuj as extended ergativity (Larsen, 1990) or crazy antipassive (Kaufman, 1990). In Ixil, there was debate between Lengyel (1978) and (Ayres, 1981) about whether it is split ergativity or nominalization.

Table 2.5 Split Ergativity in Mayan Languages

Branch	Languages	Verb types	Analysis
Yucatecan	Mopan[4]	IVs + TVs	Nominalization
	Yucatec[5]	IVs + TVs	Nominalization
Q'anjob'alan	Jacaltec[6]	IVs + TVs	Split ergativity
	Q'anjob'al[7]	IVs	Split ergativity
	Chuj[8]	IVs + TVs	Split ergativity
Mamean	Ixil[9]	IVs + TVs	Split ergativity/Nominalization
	Mam[10]	IVs	Split ergativity/Nominalization
K'ichean	Q'eqchi'[11]	IVs + TVs	Split ergativity

Dayley (1990) has shown that cases like (44) are cases of split ergativity in Q'eqchi'. Even though the transitive verb *sak'* 'to hit' does not show overt intransitivization, it still takes the suffix *-b'al* for nominalization. Maxwell (1976) has shown that in Chuj the progressive *wan* conditions split ergativity for intransitive (45)a and transitive verbs (45)b. The transitive verb, in addition to taking absolutive and ergative morphemes, takes the suffix *-an*.

(44) yoo-k in chi aa-sak'-b'al. Q'eqchi' (Dayley, 1990)
PROG-M A1s at E2s-hit-NOM
'I am hitting you.'

(45) a. wan k-olu'maj-i. Chuj (Maxwell, 1976)
PROG E1p-get.dirty-NOM
'We are making ourselves dirty.'

b. wan ø-k-aw-**an**-i.
PROG A3s-plant-INTR-NOM
'We are planting it.'

[4] Larsen (1990b).
[5] Bricker (1981).
[6] Craig (1977).
[7] Kaufman (1990), Mateo Toledo (2003), and Francisco Pascual (2007).
[8] Maxwell (1976).
[9] Ayres (1981) and Lengyel (1978).
[10] England (1983).
[11] Dayley (1990).

In Q'anjob'al, only intransitive verbs have been considered for split ergativity (Francisco Pascual, 2007; Kaufman, 1990; Mateo Toledo, 2003; Raymundo González, et. al., 2000). Transitive verbs that appear in contexts of split ergativity have been analyzed as syntactic dependency (Francisco Pascual, 2007; Mateo Toledo, 2008), crazy antipassive (Kaufman, 1990), or intransitivization in contexts of split ergativity (Mateo Pedro, to appear) or intransitivization before nominalization Mateo Pedro (2009). What makes the transitive verb crazy in contexts of split ergativity is that in addition to taking ergative and absolutive morphemes, it takes the antipassive suffix *-on* as in (45)b (Chuj (Maxwell, 1976)), in (46)b (Akateko (Schüle, 2000)), or in (47) for Q'anjob'al. The antipassive ordinarily converts transitive verbs to intransitive verbs.

(46) a. x-ø-y-il ix Mikin [**a**-wey-i] Akateko (Schüle, 2000)
COM-A3s-E3s-see CL Micaela E2s-sleep-NOM
'Macaela saw you sleeping.'

b. ø-y-il ix Mikin [ach-s-ma'-**on**-i]
A3s-E3s-see CL Micaela [A2s-E3s-hit-INTR-NOM]
'Micaela saw an uspecified 3rd person hit you.'

(47) lanan-ø hey-il-on-i. Q'anjob'al
INC-A3s E2p-see-INTR-NOM
'You (all) are watching it.'

However, as Coon (2010) has pointed out for Ch'ol, the fact that only intransitive verbs are considered for split ergativity is due to the transparent change of absolutive morpheme to ergative morphemes. In Q'anjob'al, transitive verbs have not been considered in split ergative contexts because the transitive verb still takes absolutive and ergative morphemes in addition to the suffix *-on*. Compared to Ch'ol (Coon, 2010) or Yucatec (Bricker, 1981), Q'anjob'al shows overt intransitivization of transitive verbs in contexts of split ergativity. In (48), there is a

contrast of overt intransitivization of transitive verbs in embedded clauses. Yucatec does not show overt intransitivization (48)a while Q'anjob'al does as shown by the suffix *-on* (48)b, before taking the nominalizing suffix *-i*.

(48) a. táan in kon-**ik**-ø. Yucatec (Pye, 2008)
PROG E1s sell-NOM-A3s
'I am selling it.'

b. lanan-ø hin-txon-**on**-i. Q'anjob'al
PROG-A3s E1s-sell-INTR-NOM
'I am selling it.'

Perhaps nominalization is not the appropriate name for the structural process that intransitive and transitive verbs undergo in Q'anjob'al (Mateo Pedro, 2009), however, I want to emphasize that the intransitivization constraint found in nominalization is also found in relativization, wh-question, focus, cleft formation, and negation as I show in section 4. Grammatical relations and semantics are problematic for nominalization in Q'anjob'al. However, Coon and Mateo's (2010) work on considering the suffix *-on* to mark case in embedded transitive verbs may help us to solve the problem of grammatical relations. The problem of grammatical relations is also true for split ergativity in Mayan languages. Based on studies that Mayan languages show split ergativity, there is no explanation why split ergativity occurs. The only explanation is that this phenomenon occurs when the ergative/absolutive system is replaced by a nominative/acusative system in embedded clauses, e.g. (Larsen, 1990). No further explanation of the semantics or grammatical relation is given for split ergativity. The only explanation given for split ergativity in three Mayan languages (Chuj, Jacaltec, and Q'anjob'al) comes from Quesada (1997). Quesada argues that progressive constructions in Chuj, Jacaltec, and Q'anjob'al have to have a starting

point. In this case, the absolutive morpheme cannot control this starting point; therefore it is replaced by the ergative morpheme to meet such criteria.

As shown in other Mayan languages (Larsen, 1979), split ergativity conditioned by the progressive *lanan* in Q'anjob'al is the result of a degree of grammaticalization between a stative and a complement clause. *Lanan* in Q'anjob'al (49) or *tan* in Mopan (50) resemble a contrast between matrix and subordinated clauses. In other words, *lanan* and *tan* are statives that function as matrix clauses followed by subordinate clauses, a context of nominalization (Ayres, 1981; Larsen, 1990; Larsen, 1979). Bricker (1981) has argued that the progressive *tan* in Yucatec, similar to Mopan, was originally a verb that has been grammaticalized and used to condition and still conditions split ergativity in Yucatec. Split ergativity conditioned by aspect in Yucatec or Mopan (Larsen, 1900) or Ch'ol (Coon, 2010) is the result of a grammaticalized difference between matrix and subordinate clause. Larsen and Norman (1979) have argued that diachronically, markers of tense/aspect that trigger split ergativity are grammaticalized verbs that appear in a higher position with sentential subject and take a subordinate clause. The contrast between *lanan* (49)a that apparently takes only absolutive agreement and *uj* (49)c that takes both tense/aspect and absolutive agreement shows once again a degree of grammaticalization taking place in Q'anjob'al. This process of grammaticalization is not a surprise for Q'anjob'al given that in other Mayan languages, e.g. Yucatec, a similar process of grammaticalization conditions split ergativity or nominalization (Bricker, 1981; Larsen, 1990).

(49) a. lanan-ø he-way-i.
PROG-A3s E2p-sleep-NOM
'You (all) are sleeping.

b. lanan-ø hey-il-on-i.
PROG-A3s E3p-see-INTR-NOM
'You are watching it.'

c. chi-ø uj he-way-i.
INC-A3s can E2s-walk-NOM
'You (all) can walk.'

In Mopan, *tan* takes an absolutive morpheme as its argument (50)a (Hofling, 2006), and in Ch'ol *choñkol* takes an absolutive morpheme as its argument (50)b (Coon, 2010). In Q'anjob'al constructions like those found in Mopan (50)a or Ch'ol (50)b are less ascceptable. In Q'anjob'al, an absolutive in this context is not needed (50)c.

(50) a. tan-e'ex a-che'ej. Yucatec (Hofling, 2006)
PROG-A2p E2-smile
'You (all) are smiling.'

b. choñkol-oñ [tyi uk'-el]. Ch'ol (Coon, 2010)
INC-A1s PRE cry-NOM
'I am crying.'

c. ?lanan-ex he-tzew-i. Q'anjob'al
PROG-A2p E2p-smile-NOM
'You (all) are sleeping.'

If I am interpreting the data correctly, in Mopan *tan* does not take absolutive marking when it appears with nominalized transitive subjects (51)a (Hofling, 2006). The example from Mopan in (51)a not only shows the absence of the absolutive morpheme with *tan*, but it also shows the absence of overt intransitivization of the transitive verb ch'äk[12] 'to chop' and a nominalizing suffix in contrast to Q'anjob'al (51)b. In Q'anjob'al (51)b, the absolutive morpheme is attached to *lanan* because the absolutive morpheme is not further needed on the nominalized transitive verb (Mateo Pedro, 2009).

[12] It is possible to argue that this verb has undergone intransivization, but is not transparent as in the case of K'iche' or Kaqchikel as we will see in section 3.2.1 on Nominalization in Mayan Languages.

(51) a. tan a-ch'äk
PROG E2s-chop
'You are chopping.'

b. lanan-ø hin-tzok'-on-i.
PROG-A3s E1s-chop-INTR-NOM
'I am chopping it.'

Recall that in Q'anjob'al intransitive and transitive verbs in embedded clauses have been considered as separate phenomena. In split ergativity, only intransitive verbs (52)a have been considered, while in syntactic dependency (Francisco Pascual, 2007; Eladio Mateo Toledo, 2008) or crazy antipassive (Kaufman, 1990) only transitive verbs (52)b. In (52), the transitive verb *il* 'to see' takes the antipassive suffix *-on* and the suffix *-i* in addition to absolutive and ergative agreement. It has been argued that the suffix *-i*, that appears in final position as in (52), it is only an attachment to *-on* (Mateo Toledo, 2008) or an indication of sentence closure (Francisco Pascual, 2007).

(52) a. lanan-ø he-way-i.
PROG-A3s E2p-sleep-NOM
'You (all) are sleeping.'

b. lanan **hach** **w**-il-**on**-i.
PROG A2s E1s-see-INTR-NOM
'I am seeing you.'

Properties of split ergativity and syntactic dependency in Q'anjob'al are given in Table 2.6. Some verbs that trigger split ergativity and syntactic dependency/crazy antipassive are given in (37) (Francisco-Pascual, et. al, 2007).

Table 2.6. Properties of Split Ergativity and Syntactic Dependency

Features	Split ergativity	Syntactic dependency
Aspect	-	-
Absolutive	-	+
Ergative	+	+
Intransitivizing suffix *-on*	-	+
Nominalizing suffix *-i*	+	+

(53) Aspectual verbs and split ergativity and syntactic dependency in Q'anjob'al

je -k'ul	'to desire, accept'	*ojtaq*	'to know (pleasure)'
kan yul -k'ul	'to know how'	*kuyu'*	'to learn how'
ab'ej	'to hear'	*il*	'to see'
waychilnej	'to dream'	*etz'ej*	'to imitate'
matz'ej	'to observe'	*ab'lej*	'to taste, feel'
cha'	'choose for'	*cha -k'ul*	'to like'
echb'anej	'to wait for'	*aq'lej*	'to try'
na'	'to think of'	*al*	'to invite, say'
cheq	'to send, order'	*iqej*	'to obey'

Some aspectual adverbs that also condition split ergativity and syntactic dependency are given in (54). That aspectual adverbs condition split ergativity and syntactic dependency in Q'anjob'al supports the argument that a matrix clause contains a stative that takes an absolutive morpheme. Furthermore, aspectual adverbs taking an absolutive morpheme and conditioning split ergativity and syntactic dependency indicates that both syntactic constructions are not truly syntactic but the result of grammaticalization and semantics. The semantics of each grammaticalization process condition split ergativity and syntactic dependency.

(54) Aspectual adverbs and split ergativity and syntactic dependency in Q'anjob'al

tay	'then'	*yet*	'when'
wal	'very'	*watx'*	'good'
xew	'after'	*kax*	'then'
jutxul	'slip'		

However, studies on syntactic dependency or crazy antipassive in Q'anjob'al do not take into account the changes to both intransitive and transitive verbs in embedded clauses headed by a matrix clause. Following other work (Bricker, 1981; Coon, 2010), I argue that in Q'anjob'al intransitive and transitive verbs are sensitive to nominalization, which explains the intransitivization of transitive verbs in the same context (Larsen, 1979; Quesada, 1997). With the Nominalization analysis I suggest that intransitivization is marked by the suffix *-on* and nominalization by the suffix *-i* with the following implications. On the one hand, nominalized intransitive verbs take ergative morphemes instead of absolutive morphemes and the nominalizing suffix *-i* as shown in (55)a. On the other hand, nominalized transitive verbs undergo intransitivization (marked by *-on*) before nominalization (marked by *–i*), and are cross-referenced by ergative morphemes only (55)b. Transitive verbs cannot take absolutive and ergative morphemes anymore, given that the transitive verb has undergone intransitivization due to nominalization. For this reason, the absolutive morpheme of the nominalized transitive verb moves up to the matrix clause to cross-references the object (55)b.

(55) a. lanan [**ha**-way-**i**]. Split ergativity
PROG E2s-sleep-NOM
'You are sleeping.'

b. lanan **hach** [**w**-il-**on**-i]. Syntacticdependency/crazy antipassive
PROG A2s E1s-see-INTR-NOM
'I am seeing you.'

In complement clauses that lack an aspect marker, the suffix *-i* indicates nominalization of transitive and intransitive verbs and not just an attachment to *-on* (Mateo Toledo, 2008), sentence closure (Francisco Pascual, 2007), or intransitivity (Mateo Pedro, to appear). It is true that the

suffix *-i* is problematic in Q'anjob'al (Mateo Toledo, 2008, p.c.), which I think due to its functions in different contexts. However, one way to approach this problem is proposing the Nominalization analysis that may account for both intransitive (split ergativity) and transitive (syntactic dependency or crazy antipassive) verbs found in embedded clauses. Bricker (1981) has argued that in Yucatec the suffix *-ik* that indicates nominalization is the result of grammaticalization. I assume that a similar process of grammaticalization may have happened to the nominalizing suffix *-i* in Q'anjob'al. The suffix *-i* occurs as a status suffix on intransitive verbs in matrix clauses and as a nominalizing suffix in embedded clauses. Even though both suffixes share morphological and syntactic similarities, they show other specific functions. The assumption that only intransitive verbs are licensed for nominalization explains why intransitive verbs take ergative morphemes as has been suggested for other Mayan languages, e.g. Mopan (Larsen, 1990b), Ixil (Ayres, 1981), Ch'ol (Coon, 2010), Coon & Mateo Pedro (2010). This assumption also explains why the suffix *-i* is attached to intransitive and transitive verbs.

The nominalization analysis suggests that split ergativity with intransitive verbs (55)a and syntactic dependency with transitive verbs (55)b in Q'anjob'al follow one general rule: nominalization (Larsen, 1990b; Larsen, 1979). The nominalization analysis for Q'anjob'al is reflected in the glossing of *-on* as an intransitivizer (INTR) and *-i* as a nominalizer (NOM) in the examples throughout this chapter. In Table 2.7 I present a summary of the nominalization of intransitive and transitive verbs in embedded clauses in Q'anjob'al.

Table 2.7. Nominalization in Q'anjob'al

Features	IVs	TVs
Aspect	-	-
Ergative	+	+
Intransitivizing suffix *-on*	-	+
Nominalizing suffix *-i*	+	+

The nominalization analysis raises a question whether split ergativity exists in Q'anjob'al (Francisco Pascual, 2007; Mateo Toledo, 2003; Raymundo González, 2000; Zavala, 1992). The Nominalization analysis suggests that split ergativity does not occur in Q'anjob'al. Similar arguments for nominalization in Q'anjob'al have been given for Mayan languages that display split ergativity and syntactic dependency or crazy antipassive, except split ergativity in Mocho, where the split is conditioned by the person hierarchy (Larsen, 1979).

Accounting for the argument structure of intransitive and transitive verbs in embedded clauses is a weakness of the nominalization hypothesis for Q'anjob'al. However, I assume the same argument structure problem applies to Francisco Pascual (2007) and Mateo Toledo's (2008) analyses; especially when they argue that even though a transitive verb takes *-on*, it is semantically transitive because it takes absolutive and ergative morphemes. Therefore, nominalization can be a possible alternative that can explain the usage of ergative morphemes on intransitive verbs and the intransitivization of transitive verbs in embedded clauses. The absolutive morpheme moves to the matrix clause due to the nominalization of the transitive verb in embedded clause because it has undergone intransitivization. The absolutive morpheme appears in the embedded clause in Yucatec and Mopan.

Transitive verbs in complement clauses that lack an aspect marker in Q'anjob'al show that intransitivization must occur before nominalization. Intransitivization before nominalization raises the question for transitive verbs in complement clauses like (56)c, in which the verb takes the passive morpheme *-lay* and not the expected form *-on*. In (56)a ergative cross-referencing is shown; in (56)b only the patient is marked on the verb by *-lay* and the agent is introduced by the relational noun *-uj* cross-referenced by the ergative morpheme *y-*. In (56)c even though the form *-lay* is marked on the verb it is not cross-referenced by an absolutive marking (56)b; instead, it is

cross-referenced by an ergative marking, because the transitive verb *maq'* 'to hit' is complement to the intransitive verb *xew* 'to finish'. Even though the transitive verb *maq'* appears in an embedded clause, does not take the suffix *-on* for syntactic dependency.

(56) a. max-ach s-maq'-a'.
COM-A2s E3s-hit-RTV
'S/he hit you.'

b. max-ach maq'-**lay** y-uj.
COM-A2s see-PAS E3s-RN
'You were hit by him/her'

c. max-ø xew [**ha**-maq'-**lay**] y-uj.
COM-A3s finish E2s-hit-PAS E3s-RN
'You finished being hit by him/her.'

Given that *-on* is required for syntactic dependency in Q'anjob'al (Francisco Pascual, 2007; Mateo Toledo, 2008), then one should expect *-on* in other contexts such as (57). In (57)a there is a combination of *-lay* and *-on* on the transitive verb *maq'* 'to hit'. The morpheme *-on* is required to indicate syntactic dependency. However, the combinatation of *-lay* and *-on* yielding the ungrammatical form (57)a shows that intransitivization cannot occur twice in Q'anjob'al therefore (57)b is required.

(57) a. *max-ø xew [ha-maq'-**lay**-**on**] y-uj.
COM-A3s finish E2s-hit-PAS-INTR E3s-RN
'You finished being hit by him/her.'

b. max-ø xew [ha-maq'-**lay**] y-uj.
COM-A3s finish E2s-hit-PAS E3s-RN
'You finished being hit by him/her.'

2.3.2.2.1. Nominalization in Mayan Languages

Data from other Mayan languages support the nominalization hypothesis in Q'anjob'al. For this purpose I discuss data from Mayan languages from different branches (Kaufman, 1990): K'ichean branch: Kaqchikel, K'iche', Achi, Poqom del Sur, Q'eqchi'; Yucatecan branch: Yucatec and Mopan; Tzeltalan branch: Ch'ol and Tzeltal; Mamean branch: Ixil; and Q'anjob'alan branch: Tojolab'al, Chuj, Akatek, Jacaltec, and Q'anjob'al.

The Kaqchikel data in (58) show the use of *-ïk* and *-Vn* for nominalization. In (58)a and (58)b *-ïk* and *-Vn* mark nominalization of intransitive verbs. In contrast, in (58)c only *-ïk* marks nominalization of transitive verbs and the transitive base *tz'ib'-a* 'write' undergoes intransitivization before taking the nominal suffix *-ïk*. Both nominalizing suffixes in Kaqchikel remain in non-final position (58)c.

(58) a. rat x-ø-a-chöp [atin-**ïk**] Kaqchikel[13]
you COM-A3s-E2s-start bathe-NOM
'You started to bathe.'

b. y-in-ajin [che wa'-**in**].
INC-A1s- PROG PRE eat-NOM
'I am eating.'

c. x-ø-u-chäp [__ tz'ib'-a-n-**ïk**] ri ak'wal (Ajsivinac Sián, 2007)
COM-A3s-E3p-grab write-VS-AP-NOM DET child
'The boy started to write.'

In Kiche' *-Vm* and *-iik* indicate nominalization (59). The suffix *-Vm* indicates the nominalization of intransitive verbs (59)a, while the suffix *-ik* indicates the nominalization of both intransitive and transitive verbs (59)b. In (59)b there is no overt intransitivization marking before nominalization, which happens in Kaqchikel although the interpretation indicates that

[13] Field notes on Kaqchikel (Spring-2007) from the dialect of Patzún, Chimaltenango.

passivization has occurred. Both nominalizing suffixes in K'iche' remain in non-final position (59)c. Par Sapón's (2007) data do not show alternation of *-Vm* or *-ik* for the nominalization of intransitive verbs nor vowel lengthening of the vowel of *-ik* when it indicates nominalization. Other studies in K'iche' (Larsen, 1900; Mondloch, 1981; 2008) have shown that *-Vm* and *-iik* can be suffixed to intransitive verbs; and the nominal suffix *-ik* shows example vowel lengthening (Table 2.8).

(59) a. x-ø-u-maj [wa'-**im**] K'iche' (Par Sapón, 2007)
COM-A3s-E3s-start eat-NOM
'S/he started to eat.'

b. ma x-in-b'e ta [chi -il-**ik**]
NEG COM-A1s-go IRR COMPL E3s-see-NOM
'I did not go to see him/her/it.'

c. x-at-ki-taqchi'-j ri aw-achi'l [chu-tij-**ik** q'or]
COM-A2s-E3s-force-DTV DET E2s-mate COMPL E3s-eat-NOM dough
'Your mates forced you to eat corn dough.'

Achi uses the suffixes *-VVm* and *-iik* for nominalization (60). The suffix *-VVm* is used with intransitive verbs (60)a, while the suffix *-iik* with transitive verbs (60)b. Both nominalizing suffixes remain in non-final position (60)b.

(60) a. x-in-e'-k [pa b'in-**eem**] Achi (Sis Iboy, 2007)
COM-A1s-go-IV COMPL walk-NOM
'I went to walk.'

b. x-ø-in-jeq [u-tij-**iik** ichaj]
COM-A3s-E1s-start E3s-eat- NOM herb
'I started to eat herb.'

Poqom del Sur uses the suffixes *-ik* and *-VVj* for nominalization (61). The suffix *-ik* nominalizes intransitive verbs (61)a-b, while the suffix *-VVj* nominalizes transitive verbs (61)c. Both nominalizing suffixes remain in non-final position (61)b-c.

(61) a. x-ø-u-qap [oq'-**ik**] Poqom del Sur (Benito Pérez, 2007)
COM-A3s-E3s-start cry-NOM
'S/he started to cry.'

b. x-ø-u-qap [b'ej-**ik**] ma' Kanek'.
COM-A3s-E3s-start walk-NOM CL Kanek'
'Kanek' started to walk.'

c. x-ø-w-at'alii [ch'uq-**uuj** kafee].
COM-A3s-E1s-know pick-NF coffee
'I learned to pick coffee.'

In Q'eqchi', the suffix *-ik* (62)a nominalizes intransitive verbs, while different suffixes can be used to nominalize transitive verbs (*-k, -Vl, -b'al* and *-Vm*). In (62)b, the nominalizing suffix *-il* is illustrated. The nominalized transitive verb can be headed by the complementizer *chi* (62)b.

(62) a. yoo-q-at [aa-xik-**ik**] Q'eqchi' (Xol Choc, 2007)
PROG-POT-A2s E2s-go-NOM
'You will be going.'

b. x-in-lub' [(chi) r-iiq-a-n-k-**il**]
RCOM-A1s-tired COMPL E3s-carry-DER-AP-status-NOM
'I got tired of carrying it.'

Yucatec uses *-Vl* and *-ik* for nominalization (63). For intransitive verbs both suffixes can be selected for nominalization as in (63)a and (63)b, while for transitive verbs only the suffix *-ik* is selected (63)c. These nominal suffixes remain in non-final position (63)b. There is no transparent

intransitivization marking before nominalization in Yucatec. The process of intransitivization can be done only by tone (Pfeiler, p.c.).

(63) a. k u-lúub-**ul**. Yucatec (Pye, et. al., 2008)
INC E3s-fall-NOM
'S/he falls.'

b. t-uy-il-ah-ø tàal-**ik**-en.
COM-E3s-see-status-A3s come-NOM-A1s
'S/he saw me coming.'

c. táan in kon-**ik**-ø.
PROG E1s sell-NOM-A3s
'I am selling it.'

In Mopan, nominalization is shown by *-ul* and *-ik* (64). The nominalization of intransitive verbs is shown by *-ul* (64)a, while the nominalization of transitive verbs by the suffix *-ik* (64)b. As in the case of Yucatec, in Mopan there is no overt intransitivization marking before nominalization. Larsen (1900) labels *-Vl* and *-ik* only as suffixes in contexts of split ergativity in Mopan.

(64) a. tan a-lub'-**ul** Mopan (Larsen, 1990)
PROG E2s-fall-NOM
'You are falling.'

b. tan in-lox-**ik**-ech
PROG E1s-hit-NOM-A2s
'I am hitting you.'

Ch'ol uses only the suffix *-Vl* for the nominalization of transitive and intransitive verbs (65). However, even though Ch'ol uses only *-Vl*, it sometimes shows overt marking of intransitivization before nominalization (65)b. Tseltal also uses *-Vl* for the nominalization of

intransitive and transitive verbs (66), but without overt marking of intransitivization before nominalization. The nominalizing suffixes remain in non-final position; (65)b for Ch'ol and (66)b for Tzeltal.

(65) a. chonkol-ø-ix [k-bo'y-**el**] Ch'ol (Vázquez Alvarez, 2007)
PROG-A3s-already E1s-agonize-NOM
'I am already agonizing.' Lit: 'I am getting tired.'

b. mi k-mul-añ-ø [wuts'-oñ-**el** tyi ñojpa']
INC E1s-like-SUF-A3s wash.clothes-AP-NOM PRE river
'I like to wash clothes in the river.'

(66) a. ya j-mulan-ø nux-**el** Tzeltal (Santiz, 2007)
COM E1s-appreciate-A3s swim-NOM
'I like to swim.'

b. ma x-ju'-ø k-u'un [s-tsum-**el** te k=ajk' e]
NEG INC-can be-A3s E1s-RN E3s-start-NOM DET fire CL
'I cannot start the fire.'

Tojolab'al also uses *-Vl* for the nominalization of transitive and intransitive verbs (67) (Peake, 2007). There is overt marking of intransitivization before nominalization as shown in (67)b. Also, the nominalized verb can be headed by a determiner as shown in (67).

(67) a. ø-s-mon-a-won [ja way-**el** i] Tojolab'al (Peake, 2007)
COM-E3s-convence-status-A1s DET sleep-NOM TOP
'S/he convinced me to sleep.'

b. kala wab' lek [ja s-k'uts'-j-**el** ja si'i]
I told you good ? DET E3s-cut-PAS-NOM the.firewood
'I promised you to split the firewood.'

Ixil uses the suffix *-e'* to mark nominalization of intransitive and transitive verbs in progressive context (68). In (68)b the transitive verb takes absolutive and ergative morphemes.

Even though the suffix *-e'* indicates nominalization of intransitive and transitive verbs in Ixil, Lengyel (1978) argues that this suffix does not indicate nominalization of the verb, because it is a nominative/accusative case marking. However, in the comparison data of nominalization in Mayan languages and following (Ayres, 1981), I suggest that the suffix *-e'* in Ixil indicates nominalization. It is important to note that Lengyel (1978) argues that *-e'* is not nominalization and finds himself in a puzzle when dealing with intransitive and transitive verbs in progressive aspect. In contrast, Ayres (1981) argues for nominalization due to the fact that transitive and intransitive verbs take the suffix -e' in final position. A similar discussion on the status of transitive verbs in contexts of split ergativity is still going on for Q'anjob'al. More importantly, Larsen (1900) reports that the suffixes *-ata'* and *-e'* in Ixil are in complementary distribution and appear with verbs in subordinate clauses. However, studies on Mayan languages have shown that both intransitive and transitive verbs undergo nominalization, Mondloch (1981) for K'iche', Ayres (1981) for Ixil, England (1983) for Mam, Coon (2010) for Ch'ol, Danziger (1996) for Mopan, and Mateo Pedro (2009) for Q'anjob'al.

(68) a. n(i) i-q'os-ø-**e'**. Ixil (Lengyel, 1978)
PROG-E3s-hit-A3s-NOM
'He is hitting it/him/her.'

b. n(i) i-wat-**e'**.
PROG-A3s-sleep-NOM
'He is sleeping.'

In Chuj only the suffix *-i* is used to mark nominalization of intransitive (69)a and transitive (69)c verbs. Even though there is only one suffix for nominalization, there is overt intransitivization before nominalization as shown with the suffix *-an*. The nominalizing suffix *-i* does not remain in non-final position.

(69) a. ix-ø-in-yamoch [in-munlaj-**i**] Chuj (Buenrostro, 2007)
COM-A3s-E1s-start [E1s-work-NOM
'I started to work.'

b. ix-ø-in-yamoch [ach-in-mak'-an-**i**]
COM-A3s-E1s-start [A2s-E1s-hit-INTR-NOM
'I started to hit you.'

c. ø-w-ojtak [in-b'o-an te' pat]
A3s-E1s-know E1s-make-INTR CL house
'I know how to make houses.'

In Jacaltec, the suffix *-i* indicates nominalization of intransitive and transitive verbs (70). Based on Ross Montejo and Delgado Rojas's (2000) data, I suggest that the morpheme *w-* in (70)a derives an intransitive verb from the nominal *kanhal* 'dance' while the morpheme *-n* in (70)b also derives an intransitive verb. A similar process of nominalization can be found in Akateko as shown in (71).

(70) a. x-ø-w-il [ha-kanhal-w-**i**]. Jacaltec (Craig, 1977)
COM-A3s-E1s-see E2s-dance-INTR-NOM
'I saw you dance.'

b. x-ø-w-ilwe hach [hin-kol-n-**i**].
COM-A3s-E1s-try A2s E1s-help-INTR-NOM
'I tried to help you.'

(71) a. x-ø-y-il ix Mikin [**a**-wey-i] Akateko (Schüle, 2000)
COM-A3s-E3s-see CL Micaela E2s-sleep-NOM
'Macaela saw you sleeping.'

b. ø-y-il ix Mikin [ach-**s**-ma'-**on-i**]
A3s-E3s-see CL Micaela [A2s-E3s-hit-INTR-NOM]
'Micaela saw an uspecified 3rd person hit you.'

What I have discussed in this section on nominalization in Mayan languages is summarized in Table 2.8. STATUS refers to the use of the status suffix in simple clauses; PROS refers to

prosody, whether the status suffix remains in non-final position or not; NOM IVS refers to the nominalization of intransitive verbs; and NOM TVS refers to the nominalization of transitive verbs.

Table 2.8. Nominalization in Mayan Languages

Branches	Languages	IVS Status	PROS	NOM IVS	NOM TVS	PROS
K'ichean	Kaqchikel[14]	---	---	-ïk/-Vn	-ïk	no
	K'iche'[15]	-ik	yes	-Vm/-iik	-k/(i)ik	no
	Achi[16]	-(i)k	yes	-VVm	-iik	no
	Poqom Sur[17]	-a	no	-ik	-VVj	no
	Q'eqchi'[18]	-unk	no	-ik	-k/-Vm/-Vl	?
Yucatecan	Mopan[19]	---	---	-Vl	-ik	no
	Yucatec[20]	-ih (com, A3)	no	-Vl	-ik/	no
Tzeltalan	Ch'orti'[21]	---	---	---	---	---
	Ch'olti'[22]	---	---	-Vl	?	?
	Ch'ol[23]	-i	no	-Vl	-ø	no
	Chontal[24]	---	---	-o	?	?
	Tzeltal[25]	---	---	-Vl	-Vl	no
Mamean	Ixil[26]	-ih (punctual)	?	ate'/-e'	-e'	no
Q'anjob'alan	Tojolab'al[27]	-i	yes	-Vl	-Vl	no
	Chuj[28]	-i	yes	-i/-Vl	-i	yes
	Jacaltec[29]	-i	yes	-i	-i	yes
	Akateko[30]	-i	yes	-i	-i	yes
	Q'anjob'al[31]	-i	yes	-i	-i	yes

The nominalization data in Mayan languages in Table 2.8 show the following. First, K'ichean languages (Kaqchikel, K'iche', Achi, Poqom del Sur, and Q'eqchi') distinguish

[14] Ajsivinac Sián (2007).
[15] Kaufman (1990), Larsen (1988), Mondloch (1981), Par Sapón (2007).
[16] Sis Iboy (2007).
[17] Benito Pérez (2007).
[18] Xol Choc (2007), Dayley (1990).
[19] Larsen (1900) and Hofling (2006). Hofling's data do not show use of the intransitive status suffix.
[20] Bricker (1981).
[21] Law, et. al., (2006).
[22] Law, et. al., (2006).
[23] Vázquez Alvarez (2007), Coon (to appear).
[24] Law, et. al., (2006).
[25] Santiz (2007).
[26] Ayres (1981) and Lengyel (1978).
[27] Peake (2007).
[28] Buenrostro (2007).
[29] Craig (1977).
[30] Schüle (2000).
[31] Francisco Pascual (2007), Mateo Toledo (2008).

nominalization depending on verb types. For example, in K'iche', intransitive verbs take the nominalizing suffix -*Vm* (59)a or -*iik* (59)b, while transitive verbs take the nominalizing suffix -*ik* (59)c. Yucatecan languages (Yucatec and Mopan) follow the K'ichean pattern using two types of nominalizing suffixes; -*Vl* (63)a or -*ik* (63)b for intransitive verbs, and -*ik* (63)c for transitive verbs. In contrast, Tzeltalan (Ch'ol and Tzeltal), Ixil (Mamean), and Q'anjob'alan (Tojolab'al, Chuj, Jacaltec, Akatek, and Q'anjob'al) languages use only one suffix for the nominalization of transitive and intransitive verbs. Tzeltalan languages use -*Vl*, e.g. Tseltal (66), Ixil (Mamean) uses -*e'* (68), and Q'anjob'alan languages use -*i*, e.g. Jacaltec (70).

Second, nominalization of transitive verbs requires intransitivization. A transitive verb undergoes intransitivization before nominalization. Some languages show overt marking of intransitivization (cf. Q'anjob'al), but others do not (cf. Ch'ol), using only use the nominalizing suffix or not even overtly marking nominalization as in Ch'ol (Coon, 2010). However, I would consider Coon's (2010) example from her footnote 13 and shown in (72) as a case of intransitivization of transitive verbs before nominalization. The transitive verb takes the intransitivizing suffix -*oñ*, which is cognate with the form -**Vn* found across Mayan languages (Mora, 2000).

(72) tyi k-cha'l-e wuts'-**oñ**-el.
COM A1s-do-TV wash-AP-NOM
'I did washing.'

Third, the nominalizing suffixes in K'ichean, Yucatecan, and Tzeltalan languages remain in non-final position. In contrast, the nominalizing suffixes in Q'anjob'alan languages, except for Tojolab'al do not remain in non-final position. In this respect, the nominalizing suffix -*i* in

Q'anjob'al is similar to the intransitive status suffix *-i*, which does not remain in non-final position.

Fourth, a nominalized verb is optionally headed by a preposition (cf. K'iche' and Achi) or by a determiner (cf. Tojolab'al). In some Mayan languages a complementizer is the head of a transitive complement, but when the complement is intransitive the complementizer is optionally used (Aissen, 2008, p.c.). Following the Nominalization Hypothesis I consider the complementizer as a preposition or determiner, given that prepositions or determiners are heads of a nominal form as in (73)a for Q'eqchi' or as in (73)b for Tojolab'al. In Q'anjob'al it is not possible to find a preposition or article heading a nominalized verb as seen in (74)b in contrast to (74)a.

(73) a. x-in-lub' [(chi) r-iiq-a-n-k-**il**] Q'eqchi' (Xol Choc, 2007)
RCOM-A1s-tired COMPL E3s-carry-DER-AP-status-NOM
'I got tired of carrying it.'

b. kala wab' lek [ja s-k'uts'-j-**el** ja si'i]
I told you good DER E3s-cut-PAS-NOM the firewood
'I promised you to split the firewood.'

(74) a. k'am chi-ø uj [ha-maq'-on-**i**].
NEG INC-A3s can E2s-hit-INTR-NOM
'You cannot hit it.'

b. k'am chi-ø uj [(***b'ay**) ha-maq'-on-**i**].
NEG INC-A3s can PRE E2s-hit-INTR-NOM
'You cannot hit it.'

Fifth, in some Mayan languages the intransitive status suffix is not used anymore. Kaqchikel (K'ichean), Mopan (Yucatecan), and the Tzeltalan languages, except Ch'ol, do not use the intransitive status suffix (England, 1994); however, they retain the nominalizing suffix with the exception of Ch'orti'. Even though some of these Mayan languages retain the intransitive status

suffix, some of them use it in specific contexts. Yucatec uses the intransitive status suffix *-ih* only in the completive aspect and with third person (75)a (Bricker, 1981); while Ixil uses the same suffix *-ih*, but in progressive context only (75)b (Ayres, 1981; Lengyel, 1978). In K'iche' and Achi the intransitive status suffix *-ik* does not remain in non-final position, but in Poqom del Sur, Q'eqchi' or Ch'ol, it remains in non-final position. In contrast, in Q'anjob'alan languages the intransitive status suffix *-i* does not remain in non-final position.

(75) a. h-lúub-**ih**-ø. Yucatec (Pye, et. al., 2008)
COM-fall-suffix-A3s
'S/he fell.'

b. kat wat-ø-**ih**. Ixil (Lengyel, 1978)
aspect-sleep-A3s-suffix
'He slept.'

In summary, the data in Table 2.8 show that intransitivization and nominalization go hand by hand. Most importantly, nominalization is widespread across Mayan languages. Some Mayan languages (K'ichean and Yucatecan) use nominalizing different suffixes for transitive and intransitive verbs. Other Mayan languages (Tzeltalan, Mamean, and Q'anjob'alan) use the same nominalizing suffix for transitive and intransitive verbs. The Nominalization Hypothesis argues that only intransitive stems are selected for nominalization in Q'anjob'al (76). Transitive verbs must undergo intransivization (76)b and they are not just only low in transitivity (Quesada, 1997) before nominalization. Then, intransitive and transitive verbs in Q'anjob'al are sensitive to nominalization as Bricker (1981) has argued for Yucatec.

(76) a. lanan [**ha**-way-**i**].
PROG E2s-sleep-NOM
'You are sleeping.'

b. lanan hach [**w**-il-**on**-**i**].
PROG A2s E1s-see-INTR-NOM
'I am seeing you.'

2.3.2.3. Dependent Complement

The dependent complement is further evidence of intransitivization in Q'anjob'al. In this type of complement, transitive verbs also undergo intransitivization. Intransitive verbs take the dependent suffix *-oq* (77)a, while transitive verbs take the suffix *-oj*, but after intransitivization (77)b has taken place. The dependent suffix does not remain in non-final position. When it remains in such position is not grammatical (77)c.

(77) a. maj hin [way-**oq**].
NEG A1s sleep-DEP
'I will not sleep.'

b. maj hin man-**j**-oq
NEG A1s buy-INTR-DEP
'I will not buy.'

c. *maj hin [way-**oq**] b'at tu.
NEG A1s sleep-DEP PRE DEM
'I will not sleep over there.'

Intransitivization in dependent complements is further supported when using a lexical nominal in the same context. The lexical nominal undergoes intransitivization first before taking the suffix *-oq* as shown in (78). Therefore, even though *txul* 'urine' is a lexical nominal, it undergoes intransitivization first by taking the the intransitivizer *-j* before the dependent suffi *oq*. One weakness of the Complementation Hypothesis when accounting for all kinds of complementation is that aspect markers sometimes are not omitted when using adverbs or negative markers, as in the case of the negative form *k'am* (79). When a negative marker does not replace the aspect marking clause, as in the case of *k'am*, I argue that these are other

instances of complementation, in which *k'am* takes an indicative complement. In contrast to (78), in (79) the negative form *k'am* takes an indicative complement instead of a dependent complement. In Table 2.9 I provide a summary of the morphology of the dependent complement in Q'anjob'al.

(78) a. maj hin [txul-j-**oq**].
NEG A1s urine-INTR-DEP
'I will not urinate.'

b. *maj hin [txul-**oq**].
NEG A1s urine-DEP
'I will not urinate.'

(79) k'am ch-in [txul-j-**i**].
NEG A1s urine-INTR-IV
'I will not urinate.'

Table 2.9. Dependent Context in Q'anjob'al

Features	IVs	TVs
Aspect	-	-
Agreement	-	-
Dependent suffix	-oq	- v'

2.3.3. Further Evidence of Intransitivization in Q'anjob'al

The intransitivization constraint found in transitive verbs in nominalization in Q'anjob'al is also found in relativization, wh-questions, and negation. Following Otsuka's (2000) argument for Tonga, an ergative language not from the Mayan language family and based on the intransitivization constraint of syntactic constructions like relativization, I suggest that Q'anjob'al is an ergative language not only at the morphological level but also at the syntactic level. Then, Q'anjob'al follows a syntactic rule that is sensitive to ergativity as in Mam (England, 1983). Syntactic ergativity has been shown in other Mayan languages such as K'iche'

(Kaufman, 1990; Larsen, 1990b; Larsen, 1979; Pye, 1990), Ixil (Lengyel, 1978), Yucatec (Bricker, 1981), Mam (England, 1983), Tzotzil (Dayley, 1990).

The suffix *-on*[32] in Q'anjob'al is cognate with the form *-*Vn* found in Mayan languages (Mora, 2000), and it appears in other syntactic constructions, e.g. wh-questions. In Awakateko for example, the suffix *-oon* appears on a transitive verb as an intransitivizer when the transitive subject is in a wh-question (Larsen, 1979). The intransitivization constraint is widespread across Mayan languages (Mora, 2000) as well as in other ergative languages (Otsuka, 2000). The intransivization constraint supports the argument that *-on* is an intransitivizer. The intransitivization constraint as a requirement for wh-question, relativization, and negation has been reported in other Mayan languages, e.g. K'iche' (Larsen, 1979; Pye, 1990), Mam (England, 1983), Ixil (Ayres, 1981), Jacaltec (Craig, 1977), Kaqchikel and Tz'utujiil (Dayley, 1990). The intransitivization constraint is also found in Q'anjob'al. That is, transitive subjects may not be in wh-question, relativization, and negation before intransitivization. In contrast, with intransitive subjects and/or transitive objects in these syntactic constructions, the verb morphology does not undergo any morphological change.

The intransitive subject (80)a and transitive object (80)b can be in wh-question without changing the morphology of the verb. In contrast, a transitive subject cannot be in wh-question before intransitivization marked on the transitive verb. The transitive verb takes the suffix *-on* as shown in (81)b. The data in (81)b show that transitive subjects are less accessible for wh-questions, relativization, and focus than intransitive subjects and transitive objects (Larsen, 1979).

[32] Francisco Pascual (2007) explores in detail three contexts of use of the suffix *-on* in Q'anjob'al: agent focus, syntactic dependency, and discourse dependency. However, he did not explore other contexts where the same suffix appears, e.g. relativization, wh-question, and negation.

(80) a. maktxel max-ø oq’-i? Intransitive subject
who COM-A3s cry-IV
‘Who cried?’

b. maktxel max-ø s-maq’ naq winaq? Transitive object
who COM-A3s E3s-hit CL man
‘Who did the man hit?’

(81) a. maktxel max-ø s-maq’ naq winaq?
who COM-A3s E3s-hit CL man
‘Who did the man hit?’

b. maktxel max-ø maq’-**on** naq winaq? Transitive subject
who COM-A3s hit-INTR CL man
‘Who hit the man?’

Similar restrictions of intransitivization apply to relativization and focus constructions. An intransitive subject or transitive object can be relativized and focused without any change on the morphology of the verb. Relativization of an intransitive subject is shown in (82)a and relativization of a transitive object is shown in (82)b.

(82) a. max-ø w-il naq winaq (naq) max-ø telk’oj-i.
COM-A3s E3s-see CL man PRO COM-A3s fall-IV
‘I saw the man who fell.’

b. max-ø w-il naq winaq (naq) max-ø s-maq’ ix ix.
COM-A3s E1s-see CL man PRO COM-A3s E3s-hit CL woman
‘I saw the man who the woman hit.’

In contrast, a transitive subject can be relativized (83)a or focused (83)b only if the transitive verb undergoes intransitivization marked by the suffix *-on*.

(83) a. a naq winaq max-ø telk’oj-i.
FOC CL man COM-A3s fall-IV
‘It was the man who fell.’

b. a naq winaq max-ø s-maq'-on ix ix.
FOC CL man COM-A3s E3s-hit-INTR CL woman
'It was the man who hit the woman.'

The syntactic constructions of nominalization and dependent complements show that the intransitivization constraint must take place. The intransitivization constraint applies not only in verbs that undergo nominalization but also in wh-question, focus and relativization. These syntactic constructions show that Q'anjob'al is not only an ergative language at the morphological level but also at the syntactic level. The ergative system at the syntactic level that I propose for Q'anjob'al is shown in Table 2.10. S stands for intransitive subject, O stands for transitive object, and A stands for transitive subject, NOM stands for nominalization, DEP stands for dependent, WH-Q stands for wh-question, REL stands for relativization, and NEG stands for negation. The asterisk (*) shows that each syntactic construction cannot happen in the first place before intransitivization. One observation from Table 2.10 is that in contrast to the wh-question, relativization, negation, and focus of the object, an object cannot be nominalized or be in a dependent complement.

Table 2.10. Syntactic Ergativity in Q'anjob'al

	NOM	DEP	WH-Q	REL	NEG	FOCUS
S	√	√	√	√	√	√
O	*	*	√	√	√	√
A	*	*	*	*	*	*

2.4. Situation of the Language

Q'anjob'al is considered to be at minimal risk of loss (Richards, 2003). However, social, economic, and political changes such as the improvement in transportation, the establishment of a regional court, the establishment of health centers, and the reactivation of the coffee plantations in Barillas threaten the loss of the language (Toledo, 2008a). Mateo Toledo states that Q'anjob'al

is used mainly in family contexts, ceremonial activities, traditional medical practices, and occasionally in formal community meetings. Given that Q'anjob'al is used in specific contexts and even though most children speak it, it may be considered as an unsafe language (UNESCO, 2009).

The media also affects the status of Q'anjob'al. Television and radio have become elements that have broken cultural values in Q'anjob'al families in the sense that instead of using the language with children, television programs in Spanish are promoting the use of Spanish. Children are exposed to television programs in Spanish and not in Q'anjob'al. In Guatemala in general, television programs are not produced in the Mayan languages. Before the invasion of television, Q'anjob'al parents and children used to spend time together after dinner for story telling to promote the use of the language with children. Now television viewing has replaced those family practices. The only media that uses Q'anjob'al is the radio. The Radio Comunitaria Snuq' Jolom, for example, provides some programs in Q'anjob'al, but not for teaching or strengthening the language, but for a better acceptance of its program to the audience. The Comunidad Lingüística Q'anjob'al of the Academia de las Lenguas Mayas de Guatemala has produced programs in Q'anjob'al at the Radio Comunitaria Snuq' Jolom Konob', focusing on four aspects: the ALMG, linguistics, culture, and education (Daniel Medardo, 2009, p.c.).

2.5. Cultural Background

This section describes some cultural beliefs about a newborn in Q'anjob'al and baby talk, i.e. the interaction of a family with a child. In order to say something about baby talk in Q'anjob'al, I analyzed the first and final sessions of each child in the present study. I analyzed the first and the final sessions, because I assumed that parents, relatives, or siblings would not show much baby

talk in the initial setting where they were not used to the presence of the recording equipment and investigator encouraging the child and his/her family to talk. Therefore I analyzed the last session where one would expect more baby talk because of the relatives and siblings' familiarity with the equipment and the investigator(s).

2.5.1. Beliefs about a Newborn

In this section I want to describe some cultural practices about treating a newborn. Extended families are common in Guatemala, even though the children that I worked with live only with their parents. Xhim's case is special, because he lives with his grandparents, but not with his parents. Naming the child after his grandfather or her grandmother (*k'exel*) is very common in Q'anjob'al. It is common to see switching names to last names and last names to names between generations.

There is a common expression among adult speakers of Q'anjob'al *lananxa yok animahil* 's/he is becoming human being' when the child becomes aware of using language and reasoning. An implication of *lananxa yok animahil* is that a child may undergo a non-human stage, from the birth age to 2 years. I assume that this view that a child may undergo a non-human stage can be related to the question *tzet nohal* 'what animal is it?' when people ask about the gender of a newborn. Of course nobody asks the questions in front of the parents or relatives of the newborn. This cultural practice/joke about the newborn is disappearing because of different religions propagating in the Q'anjob'al region.

Q'anjob'al speakers believe that their spirits go away for a period of time each year. While the spirits are away, Q'anjob'al speakers must eat *q'aja' patej* 'tortillas with bridge shape forms', to help their spirits come back. Not following this cultural practice has a negative effect. For

example someone could wander around, not knowing what to do or say, because s/he did not eat *q'aja' patej* to help his/her spirit come back.

One interesting observation relating to language acquisition occurs when children are slow in acquiring the language. People in the Q'anjob'al community believe that when a child is slow in acquiring the language, it is because s/he is focusing on developing other parts of her/his development such as walking. This cultural and empirical observation is also true for Mam (Jiménez, p.c.; López Ramírez, p.c.). It is also true in other languages from other cultures such as in Wolof (Tamba, p.c.). To my knowledge and based on my notes on my seminar class on Specific Language Impairment (2006) there is no study on this empirical observation in Mayan culture or in other cultures. This observation requires a scientific study, but most importantly an empirical knowledge of the community, which any fieldworker should be aware of when doing first language acquisition study.

2.5.2. Baby Talk

Baby talk in Q'anjob'al needs to be explored in future research. I analyzed the first and the last session of each child for this discussion of baby talk. These files are: Xhuw (QA260207.out & QA100707.out), Xhim (QG260805.out & QG190106.out), Tum (QD240905 & QD251005). Based on this analysis, baby talk in Q'anjob'al can be seen at lexical and phonological levels ((85)-0). I found few cases of baby talk at the morphological level.

The words used in baby talk in Q'anjob'al that I found in the six files are shown in (84). The form *koko'* is used to calm down a child when s/he is upset or misbehaving; if the child does not stop then *koko'* will come and get him/her. The form *kaka'* refers to drinks made from corn. The form *papa'* is mainly to encourage a child to eat; and the form *o'* is used when referring to

something dirty, e.g. a diaper. Xhim's grandmother used only baby talk at the lexical level and not at the phonological level in contrast to Xhuw's father, Xhim's aunt, and Tum's mother.

(84) Baby talk at lexical level in Q'anjob'al

Words	Interpretation
koko'	'to calm down a child'
kaka'	'to offer a drink made of corn to a child'
papa'	'to motivate a child to eat, mainly tortillas'
o'	'to refer to something dirty'
chixh	'to refer to something dirty'
nono'	'to refer to animals'
pum	'to refer to something/someone falls'
chul(o, a, i)	'to refer to a child in diminutive form'
nen	'to refer to a child'
pip	'to refer to any vehicle that whistle'
lolo'	'to refer to a candy or something than can be found at a store'
chichi'	'to refer to meat'
chiwit	'to refer to a dog'

Xhuw's father engaged in baby talk at the lexical and phonological levels as shown in (85). It is important to note that not all of these forms are strictly baby talk. Xhuw's father produced the words in (85) in their adult forms also, even though in some cases he used them in baby talk. The substitution pattern that Xhuw's father followed is shown in column two in (85). The fourth column reflects how Xhuw's father adapts his phonology to Xhuw's as well as Xhuw's pattern of substitution.[33] Even though in lower frequency, the same pattern of substitution can be seen from Xhim's aunt (86) and Tum's mother (87).

(85) Xhuw's father

Adult form	Baby talk	English	Substitution
k'am	am	'there is no X'	k' > ø
k'amaq	amaq	'no'	k' > ø
tz'iltaq	ch'iltaq	'dirty'	tz' > ch'
tzet yetal	chetal	'what is it?'	tz > ch

[33] Pattern of substitution is not part of the present study, but it will be something to explore in future research.

tzeb'ach	cheb'ach	'come'	tz > ch
txitam	chitam	'pig'	tx > ch
maktxel	makchel	'who is it?'	tx > ch
tix	tixh	'there it is'	x > xh
xin	xhin	'then'	x > xh
kanoq	kanok	'it will stay'	q > k
mis	mixh	'cat'	s > xh
pis	pixh	'to sit'	s > xh
kalsetin	taxhtin, kalxhetin	'socks'	s > xh
jwana	bana	'Juana'	j > b

(86) Xhim's aunt

dult form	Baby talk	English	Substitution
flores	polexh	'flowers'	f > p
xin	xhin	'then'	x > xh
osito	hin'oxhito[34]	'my bear'	s > xh
kaseta	kaxheta	'cassette'	s > xh

(87) Tum's mother

Adult form	Baby talk	English	Substitution
mis	mixh	'cat'	s > xh
resito	lexhito	'type of snacks'	s > xh, r > l
ax	axh	'here it is'	x > xh
naq	nak	'he'	q > k
tzeb'ach	cheb'ach	'come'	tz > ch
kachi	hachi	'say it'	?

In conclusion, baby talk in Q'anjob'al occurs at the lexical and phonological levels. Xhim's grandmother produced baby talk, but only at the lexical level. This fact raises the question about who produces baby talk the most, the younger generation (young parents, siblings), the old generation (mother or father, brother or sister, grandmother or grandfather). From this analysis I can tell that baby talk varies from family to family (compare Xhuw's father with Xhim's grandmother) and generation to generation (compare Xhim's aunt and grandmother). Baby talk varying across families can be seen by comparing Xhuw's father and Xhim's aunt, who produced more baby talk at the phonological level. In contrast, within the same family, Xhim's

[34] It is becoming common to find that ergative morphemes before vowels are being replaced by ergative morphemes before consonants.

grandmother used baby talk, but only at the lexical level and not at the phonological level as Xhuw's father or Xhim's aunt does. Based on the data in (85) through 0(87), baby talk occurs mostly with parents and not with grandparents. Or perhaps baby talk will occur depending on the age of the child such as in Xhuw's case since she is younger than Xhim and Tum. These questions remain for a future study.

2.6. Conclusion

In this chapter I discussed different complement constructions making a distinction between a matrix clause and a complement clause. The matrix clause is cross-referenced by an absolutive morpheme to indicate finiteness. As has been shown in other Mayan languages, the matrix clause is followed by a complement clause, which can be an indicative, nominalized, or dependent. Each complement type has a different form of morphology on the verb. I made the assumption that the indicative complement is the context of the ergative system in Q'anjob'al and at the morphological level, while the nominalized and dependent complements occur at the syntactic level. For this reason, I consider Q'anjob'al as an ergative language at the morphological and syntactic levels. In the nominalized complement I showed that split ergativity with intransitive verbs and syntactic dependency or crazy antipassive with transitive verbs in Q'anjob'al follow just one rule, nominalization. The Nominalization analysis accounts for the intransitivization of transitive verbs marked by the suffix *-on* before nominalization. I showed that the intransitivization constraint is widespread in Mayan languages. I further showed that transitive verbs in nominalized and dependent complements are sensitive to the intransitivization constraint found across Mayan languages. Further contexts of the intransitivization constraint in Q'anjob'al are found in other syntactic constructions like wh-questions. Given that transitive verbs are

sensitive to the intransitivization constraint in nominalized and dependent complements, wh-questions, relativization, negation, and focus, I suggest that Q'anjob'al is not only an ergative language at morphological level but also at the syntactic level. In this chapter I also described thoughts about a child born in a Q'anjob'al community and also baby talk in the language. My analysis showed that baby talk varies from family to family and parents perform more baby talk than grandparents as seen between Xhuw's father and Xhim's grandmother. Or perhaps Xhuw's father doing more baby talk is because of Xhuw's age.

Chapter 3

Theories and Predictions

Introduction

This chapter is divided into two main sections. In section 1 I discuss two influential theories in first language acquisition. In section 2 I develop my predictions for the acquisition of the verb morphology in Q'anjob'al, based on the previous acquisition studies in Mayan languages and the two first language acquisition theories. In the last section I present my conclusion pointing out what is missing from previous Mayan acquisition studies and from the two first language acquisition theories.

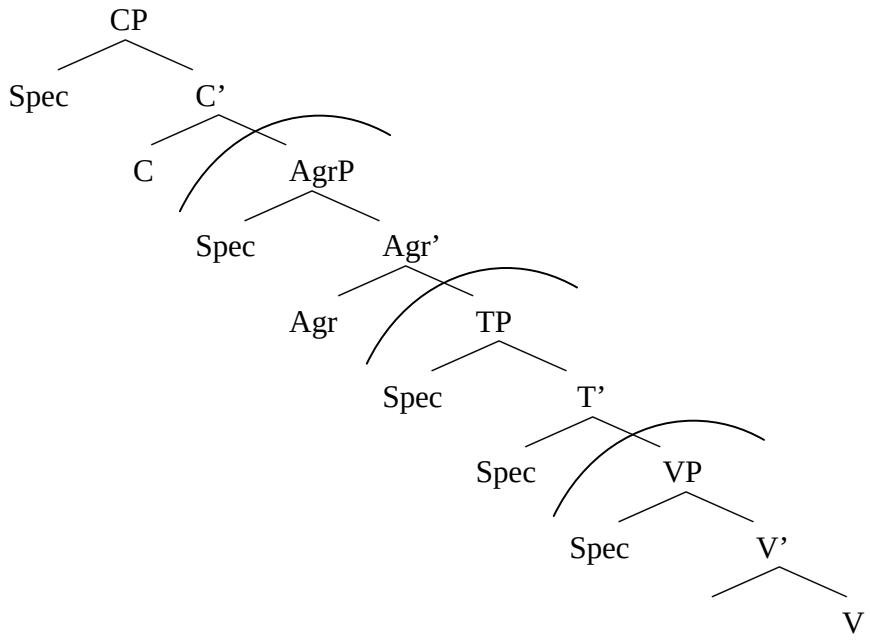
3.1. First Language Acquisition Theories

In this section I explore two acquisition theories: 1) the Truncation Hypothesis (Rizzi 1993/1994) and the 2) the Auxiliary Complement Hypothesis (Pinker 1984).

3.1.1. The Truncation Hypothesis (Rizzi 1993/1994)

The Truncation Hypothesis (Rizzi 1993/1994) argues that the Root Complement Phrase (CP) optionally occurs in the child grammar, given that it matures between the second and third year after birth in the child's grammar. Children cannot produce functional projections above the Verb Phrase due to the lack of syntactic competence; therefore they may truncate any functional projection, e.g. the Tense Phrase (TP) or the Agreement Phrase (AgrP). If a functional projection is truncated, then all the functional projections above it are truncated too, but functional projections under that node are preserved. Truncation of functional projections is shown in (1).

(1)



The presence of fronted *wh*-operators force the projection of CP, therefore all projections under CP must also be present (Guasti 2002). Despite the fact that the truncation hypothesis makes precise predictions for the truncation of functional categories, questions still remain about the type of material that can activate a functional projection and why a child will stop truncating functional projections. It may be that when children begin using embedded clauses, Root Infinitives decrease, so children stop truncating functional categories (Hamann 2002).

3.1.2. The Auxiliary Complement Hypothesis (Pinker 1984)

The Auxiliary Complement Hypothesis (Pinker 1984) argues that an auxiliary verb constrains the morphology of its verb complement e.g. finite, non-finite, participle verb forms, etc. According to this hypothesis children analyze auxiliaries as complement-taking verbs. However, given the need for children to learn the specific constraint on complements, children will not immediately acquire the constraints on the complement verbs. When children fail to

apply this constraint they produce errors such as *'I can let it spilled'* or *'I gonna saw it'* (Pinker 1984).

Pinker (1984) suggests three reasons why English speaking children would show errors in combining verbs and their complements: a) the morphology of the particular verb complement was not identified correctly as signifying an infinitive, participle, etc.; b) the constraint of the main verb or auxiliary failed to be applied in the production of the sentence for performance reasons; or c) the constraint of the verb is not learned yet. In contrast to the Truncation Hypothesis, the Auxiliary Complement Hypothesis does not argue for the absence of auxiliary verbs, but it predicts other verb forms given that children have not acquired the constraints on verb complements.

To summarize, each theory makes different predictions for the acquisition of the verb morphology in root and embedded clauses. The Truncation Hypothesis predicts that the omission of grammatical morphemes is due to a deficit of verbal inflection; while the Auxiliary Complement Hypothesis predicts the lack of constraint on combining verbs with their complements. In other words, the Truncation Hypothesis predicts the omission of auxiliary verbs while the Auxiliary Complement Hypothesis predicts a failure to observe constraints on the complement verb morphology.

3.2. Predictions

The Mayan verb studies and the syntactic constructions developed under the Complementation Hypothesis in chapter 2 and the two theories of first language acquisition discussed in this chapter have several implications for the acquisition of Q'anjob'al. The four types of clauses of Q'anjob'al, the findings in Mayan language acquisition studies, and the two

theories of first language acquisition studies are the background for the acquisition of Q'anjob'al. While the primary purpose of the present dissertation is to document how children acquire complex verb constructions in Q'anjob'al, I do not propose a formal approach to explain the acquisition of the verb inflection in this language. In section 2 I list the predictions of the Complementation Hypothesis and findings of the acquisition of the verb morphology in Mayan languages for the acquisition of Q'anjob'al.

3.2.1. Predictions from Mayan Acquisition Studies

In this section I present the predictions based on Mayan acquisition studies. These predictions are listed below.

3.2.1.1. CVC Verbs in Q'anjob'al

Given that children acquiring K'iche' used their first verbs with the CVC form plus the status suffix (Pye, 1983) or children acquiring Tzotzil (de León, 1999b), or Tzeltal (Brown, 1998) produced first CVC bare verb forms, then Q'anjob'al children might show a mixture of verb root and status suffix and/or CVC bare verb forms. If Q'anjob'al children produce either verb roots and status suffix or CVC bare verb forms, then findings of the acquisition of Q'anjob'al will not only follow the Mayan pattern verb root and optional status suffix, but also follow the Minimal Word Constraint (Demuth, 1996a, 1996b). The Minimal Word Constraint argues that children produce words with a small phonological shape. The Minimal Word Constraint may provide a better explanation, for example, why Tzeltal children acquire ergative morphemes before vowels earlier than ergative morphemes before consonants and not exactly to the difficulty of identifying these morphemes in the input as Brown (1998) suggests. Special focus on the acquisition of the

CVC verb roots in Q'anjob'al will show whether Q'anjob'al children produce CVC and non-CVC verbs or only one form, e.g. CVC. Children's production of verbs with CVC might explain the late acquisition of aspect and agreement in Q'anjob'al as well as in the other Mayan languages. Also, if the CVC shape of verbs has an effect on the acquisition of aspect and agreement, then it may account for the acquisition of any aspect in Q'anjob'al and not necessarily following an order of acquisition of aspect as has been suggested in Mayan language acquisition studies (Brown, 1998; Mateo Pedro, 2005; Pye, 1990). If children show an order of acquisition of aspect due to the phonetic complexity of Q'anjob'al, then this might explain why Q'anjob'al or Mayan children show patterns of sound substitution (Pye, et. al., 2008). Assuming that Q'anjob'al children begin with CVC verb roots, one would predict that they do not produce derivational affixes on the verb as in the case of *-on* for nominalization (2) in Q'anjob'al or causative *-s* in K'iche' as we saw in section 1.

(2) wak kokuyi. CHILD N (2;3) (Mateo Pedro, to appear)
= watx' **ko**-kuy-*on-i
good E1p-study-INTR-NOM
'It is good for us to study (it).'

3.2.1.2. Aspect

Children acquiring Mayan languages show a late acquisition of aspect marking; however, De León (1999c) found that Tzotzil children produce adverbial particles to mark aspect instead of the prefixes. Her findings raise the question of what type of adverbs Mayan children use to express aspect. Acquisition of aspect in Q'anjob'al as well in other Mayan languages must be evaluated in relation to the production of adverbs. In Q'anjob'al some adverbs of time are

sensitive to aspect (Mateo Toledo, 2008). Some of them allow the verb to take aspect (3) and others replace the aspect (4).

(3) a. ch-ach lo-w **yekal**.
INC-A2s eat-AP tomorrow
'You will eat tomorrow.'

b. hoq-ach lo-w **yekal**.
POT-A2s eat-AP tomorrow
'You will eat tomorrow.'

c. *max-ach lo-w **yekal**.
COM-A2s eat-AP tomorrow
'You will eat/ate tomorrow.'

(4) a. **mayal** hach lo-w-i.
already A2s eat-AP-IND
'You ate already.'

b. ***mayal** max-ach lo-w-i.
already COM-A2s eat-AP-IND
'You ate already.'

c. ***mayal** ch-ach lo-w-i.
already INC-A2s eat-AP-IND
'You ate already.'

Adverbs of manner cause nominalization of intransitive and transitive verb complements in Q'anjob'al as shown in (5). In (5)a, *k'ojank'ulal* 'slowly' causes the nominalization of an intransitive verb, while in (5)b, the nominalization of a transitive verb. I analyze only the acquisition of aspect in Q'anjob'al and leave the acquisition of adverbs for future research.

(5) a. **k'ojank'ul** ha-b'ey-i. Intransitive Nominalization
slowly E2s-walk-NOM
'You walk slowly.'

b. **k'ojank'ul-ø** ha-maq'-on-i. Transitive Nominalization
slowly-A3s E2s-hit-INTR-NOM
'You hit it slowly.'

3.2.1.3. Ergative and Absolutive Morphemes

The fact that Tzeltal speaking children acquire initial vowel ergative morphemes earlier than initial consonant ergative morphemes (Brown, 1998) predicts that Q'anjob'al children may acquire ergative morphemes first with vowel-initial transitive verbs in contrast to consonant-initial transitive verbs. Also, the fact that independent pronouns replace ergative morphemes in K'iche' (Pye, 1990) and Tzeltal (Brown, 1998) raises the question for children acquiring Q'anjob'al whether they also use independent pronouns in place of ergative morphemes. Mateo Pedro (2005) did not find independent pronouns replacing ergative morphemes from a cross-sectional data in Q'anjob'al, but it might happen in the longitudinal data being explored in the present study.

In Tzotzil absolutive morphemes can be prefixes or suffixes, although De León (1999a) does not report whether Tzotzil children first acquire absolutive morphemes as prefixes or suffixes. Children acquiring Q'anjob'al may assume the Tzotzil pattern; they might use absolutive morphemes optionally as a prefixes (6)a or suffixes (6)b. In Akateko, the absolutive morpheme optionally occurs as a suffix. In the Q'anjob'al of Santa Eulalia I know of two speakers who use the absolutive morpheme as a suffix, but it is not a general pattern with other speakers of the same town.

(6) a. max-**ach** w-il-a'. Absolutive prefix
COM-A2s E1s-see-RTV
'I saw you.'

b. ?max w-il-**ach**. Absolutive suffix
COM E1s-see-A2s
'I saw you.'

3.2.1.4. Suffixes

In K'iche' and Q'anjob'al, children showed errors with status suffixes. They extended the status suffixes to non-final position. In contrast, children acquiring Yucatec (Pfeiler, 2003b) or Tzotzil (de León, 1999a) made errors of using status suffixes with the incorrect transitivity. The notion of transitivity in these two languages appears later in contrast to K'iche' or Q'anjob'al. The findings in Yucatec and Tzotzil suggest that Q'anjob'al children may make errors of not just extending the status suffixes to non-final final position, but using them with the wrong verb types and wrong clausal types.

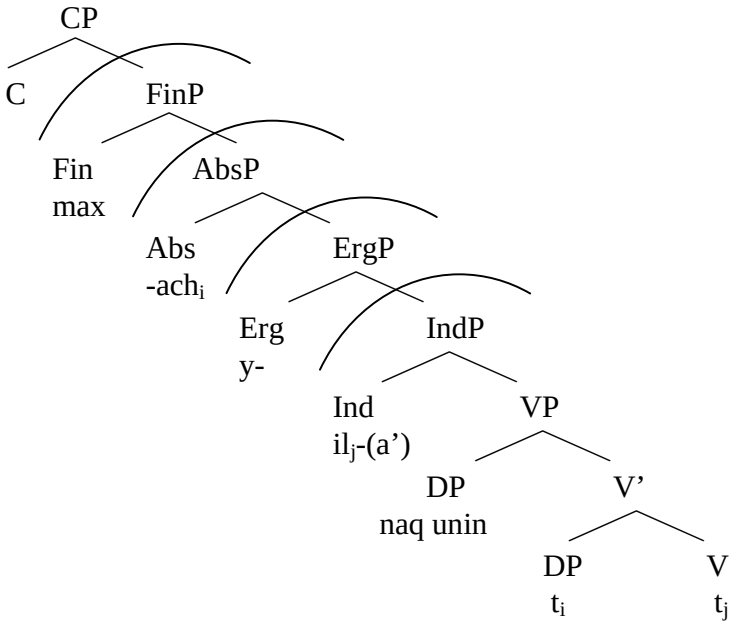
3.3. Predictions from First Language Acquisition Theories

In addition to the analysis of each inflectional morpheme found on the verb in Q'anjob'al, I also analyze what specific inflectional morphemes are missing in the verb template shown in (7).

(7) Q'anjob'al Verb Template
ASPECT+ABSOLUTIVE+ERGATIVE+**[VERB]**_STEM+STATUS

Predictions of the verb template in (7) are based on the Truncation Hypothesis (Rizzi, 1993/1994) and Pinker (1984). The Truncation Hypothesis is less radical in predicting the omission of any inflectional morpheme and not necessarily the inflection of Agreement or Tense as predicted by other theories like ATOM.

(8)



max-ach y-il naq unin
COM-A2s E3s-see CL child
'They boy saw you.'

The tree structure in (8) predicts (9)a, but not (9)b due to the presence of aspect. This hypothesis also predicts different verb forms like those in (10).

(9) a. ~~max-~~ach y-il naqunin.
COM-A3s E3s-see CL child
'The boy saw you.'

b. max-~~ach~~ y-il naq unin.
COM-A3s E3s-see CL child
'The boy saw you.'

(10) Verb forms
a. entire complex
b. omission of aspect
c. omission of aspect and absolutive
d. omission of aspect, absolutive and ergative
e. bare stem (verb + status)

The Truncation Hypothesis makes similar predictions for the nominalized and dependent verb forms. The predicted truncated verb forms are shown in (11)b through (11)d. In (11)b, the Auxiliary Phrase (*lanan*) is truncated. In (11)c, the Absolutive Phrase (*hach*) is also truncated, referring to a third person singular. In (11)d the Auxiliary, Absolutive, and Ergative Phrases are truncated. This hypothesis does not predict the omission of *-on* in (11)e because of the presence of *lanan*. The Truncation Hypothesis does not predict bare roots in final position.

(11) a. lanan hach y-il-on naq unin. Nominalized complement
PROG A2s E3s-see-INTR CL child
'The boy is watching you.'

b. ~~lanan~~ hach y-il-on naq unin. *lanan* truncated
PROG A2s E3s-see-INTR CL child
'… The boy saw you.'

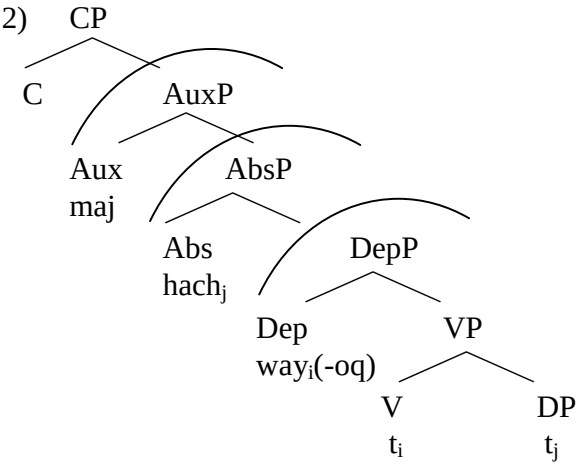
c. ~~lanan~~ ~~hach~~ y-il-on naq unin. *lanan* and *hach* truncated
PROG A2S E3s-see-NOM CL child
'The boy saw him/her/it.'

d. ~~lanan hach~~ ~~y-~~ il-on-(i) naq unin. *lanan*, *hach*, and *y-* truncated
PROG A2S E3S-see-INTR-NOM CL child

e. lanan hach y-il-~~on~~ naq unin. Not predicted
PROG A2s E3s-see-NOM CL child
'The boy is watching you.'

In the Dependent context, the Truncation Hypothesis predicts that the CP, Auxiliary, and Absolutive Phrases can also be truncated (12).

(12)



The truncated forms based on (12) are illustrated in (13)b and (13)c. The truncation of the Finite Phrase (13)b and both the Finite and Absolutive Phrases shown in (13)c are predicted by the Truncation Hypothesis.

(13) a. maj hach way-oq. Dependent complement
NEG A2s sleep-DEP
'You will not sleep.'

b. ~~maj~~ hach way-oq. *maj* truncated
NEG A2s sleep-DEP

c. ~~maj~~ ~~hach~~ way-oq. *maj* and *hach* truncated
NEG A2s sleep-DEP

3.4. Predictions from Complementation Constructions

The indicative, nominalized, and dependent complements presented in chapter 2 assume that Q'anjob'al children are dealing not only with matrix clauses but also with a variety of complex clauses. Pye (1990) found that in K'iche', children do not have problems acquiring the ergative system at the morphological level, but they do at the syntactic level. Pye's finding suggests that Q'anjob'al children may produce the indicative complement without problems, but nominalized

and dependent complements with problems. Further evidence that Q'anjob'al children may acquire nominalization late and showing errors comes from Carrillo Carreón's (2007) study on the acquisition of the split ergative system in Yucatec. He predicted that children in Yucatec do not acquire the split ergative system until the age of 3;0. Two types of overgeneralization can be seen in these clause types: within each complement type and across the three complement types.

In regard to errors within each clausal type, I predict that Q'anjob'al children may produce nominalized contexts, but with the incorrect morphology of intransitive or transitive verbs as Pinker's theory suggests. Q'anjob'al children may extend the nominalization of intransitive verbs to transitive verbs just producing the ergative morpheme and the nominalizing suffix *-i* as shown in (14)a (Mateo Pedro, to appear). Or, Q'anjob'al children may extend the nominalization form of transitive verbs to intransitive verbs but not only using the ergative morpheme and the nominalizing suffix *-i*, but also using *-on* with the intransitive verb as in (14)b. Or these children may simply show a late acquisition of nominalization as in Yucatec, where the split ergative system is acquired around the age of 3;0.

(14) a. wak kokuyi. CHILD N (2;3) (Mateo Pedro, to appear)
=watx' **ko**-kuy-*on-**i**
good E1p-study-INTR-NOM
'It is good for us to study (it).'

b. *watx' **ko**-way-**on**-**i**. Unatested
good E1p-sleep-INTR-NOM
Intended: 'It is good for us to sleep.'

Other types of errors may be seen across the four clause types. A Q'anjob'al child may use morphology of nominalization in a context for indicative or dependent complements. In a nominalized context as in (15)a, a child might produce an indicative (15)b or dependent (15)c

complement instead of the expected nominalized complement. The Auxiliary Complement Hypothesis (Pinker, 1984) predicts that these potential types of errors in Q'anjob'al may appear because of the children's lack of knowledge of the constraint for each clause type. Pinker's hypothesis predicts that even though Q'anjob'al children have difficulties with the constraint for each complement type, they do not have problems producing the matrix clauses that constrain each clausal type.

(15) a. lanan hach y-il-on naq unin. Nominalization
PROG A2s E3s-see-NOM CL child
'The boy is seeing you.'

b. *lanan hach y-il-**(a')** naq unin Nominalization > Indicative
PROG A2s E3s-see-RTV CL child
Intended: 'The boy is seeing you.'

c. *lanan hach y-il-**(oq)** naq unin Nominalization > Dependent
PROG A2s E3s-see-DEP CL child
Intended: 'The boy is seeing you.'

3.5. Imperatives

In addition to the indicative, nominalized, and dependent clauses, I evaluate the acquisition of imperative verb forms in Q'anjob'al. Imperative verb forms of Q'anjob'al also have theoretical implications. Studies of Root Infinitives (e.g. Salustri and Hyams, 2003) have argued that non-finite verb forms found in child data resemble imperatives. This argument is crucial for the acquisition of the verb complement types in Q'anjob'al. It implies that Q'anjob'al children may start with imperative forms as shown in (16) and then extend them to the indicative, nominalized, and dependent clauses.

(16) a. way-an. Intransitive imperative
sleep-IMP
'Sleep!'

b. kol-in! Transitive imperative
help-A1s
'Help me!'

3.6. Conclusion

In this chapter we have seen that Mayan acquisition studies have focused on the verb morphology mainly in indicative contexts, with the main finding that Mayan children acquired first the morphology at the right edge of the verb and later the morphology at the left age. Few studies have been done on verbal complex constructions such as the antipassive construction in K'ich'e (Pye, 1990), the split ergative system in Yucatec (Carrillo Carreón, 2007), and instrumental constructions in Tzeltal (Brown, 2007).

As for the discussion of the first language acquisition theories we saw that the two theories make different predictions for the acquisition of the verb forms in Q'anjob'al. The Truncation Hypothesis argues that the omission of inflectional morphology on the verb is due to some deficit in the morpho-syntactic realization. This hypothesis is less radical in predicting the omission of any inflectional morphology. In contrast, the Verb Complement Hypothesis predicts that the omission of inflectional or derivational morphemes occurs due to the lack of constraint of the morphology of verb complements as suggested.

Now we are left with the question of whether the Q'anjob'al children's verb inflection can be predicted by the findings in Mayan languages studies or by any of the two first language theories explored in the present study. Assuming that Q'anjob'al children follow the pattern of Mayan

language studies, we want to know if these children show an early knowledge of verb complex constructions. Table 3.1 provides a summary of the predictions for the acquisition of Q'anjob'al.

Table 3.1. Summary of Predictions

Source	Prediction for Q'anjob'al
K'iche'	Children initially used bare stems
Yucatec	Children overextend transitive suffix
Truncation	Full inflection with matrix clauses
Complementation	Constraint violations
Root Imperatives	Imperative as default form

Chapter 4

Methodology

Introduction

This chapter presents the steps followed in the present study from gathering the Q'anjob'al child data to presenting results on the acquisition of verb inflection in Q'anjob'al. The chapter is organized as follows. Section 1 provides general information about the three children including the ages of each child, the sessions where the data were extracted, the length of each session, the intransitive and transitive verbs divided into two main positions: non-final and final positions. Section 2 centers on data collection; section 3 describes the different types of analysis performed in the present study, e.g. frequency analysis. Finally, section 4 briefly describes the stage of the language in terms of acquisition.

4.1. Subjects

In the present study I explore Q'anjob'al child data previously collected and transcribed in the project on Documenting Mayan Language Acquisition under Professor Clifton Pye's direction and funded by the National Science Foundation (BCS 0515120 and BCS 0613120). The data come from three monolingual Q'anjob'al children from the ages of 1;8, 2;3, and 2;6 [years; months] over a period of six months (Table 4.1). Most Q'anjob'al children acquire Q'anjob'al as their first language at home. Q'anjob'al children do not start to learn Spanish as a second language until the age of seven when they are sent to school. Even though children acquire Q'anjob'al at home, they are exposed to television and radio programs in Spanish. In the last ten years the Radio Comunitaria Snuq' Jolom Konob' in Santa Eulalia has promoted the use of Q'anjob'al in its programs.

The three children that I worked with are identified as Xhuw (1;9-2;4), Xhim (2;3-2;9), and Tum (2;7-3;1). Xhuw was the first child in the family when the recordings started. She lived with her parents who speak Spanish fluently. However, she spends most of her time with her female cousin, who is twenty years old. In the recordings, Xhuw interacted with her father and cousin the most, and had few interactions with her mother. Xhuws was mainly exposed to Q'anjob'al even though sometimes she uses a few Spanish words due to her exposure to children's television programs or to her parents' switching from Q'anjob'al to Spanish.

Xhim lives with his grandparents, aunts, and uncles. He spends more time with his grandmother and with his aunts after they come home from school. Xhim sometimes spends time at his grandparent's local business at the communal market of Santa Eulalia. His grandparents are monolingual in Q'anjob'al and use basic Spanish. Even though Xhim's aunts and uncles go to school they barely use Spanish at home with him. Therefore Xhim has little exposure to Spanish from his relatives, except from children's television programs in Spanish. In the recordings Xhim interacted mostly with his two aunts and with his grandmother. There were very few cases where he interacted with his uncles or grandfather.

Tum was the first child in the family, but had a younger sister who was 1;7 years old when the recordings started. Tum spends most of her time with her mother and younger sister. She was exposed mostly to Q'anjob'al and knew a few Spanish words, but as in Xhuw's and Xhim's cases, she was exposed to children's television programs in Spanish. Her parents are less fluent in Spanish. In the recordings Tum interacted mostly with her mother and sister.

Table 4.1. Q'anjob'al Children

				Intransitive verbs		Transitive verbs	
Child	**Age**	**Sessions**	**Length**	**-final**	**+final**	**-final**	**+final**
Xhuw	1;9	QA260207	48:11.113	2	2	0	2
	1;11	QA050407	60:39.097	12	12	7	18
		QA200407	63.25				
	2;0	QA040507	52:20.857	2	24	4	11
		QA190507	65:17.00				
	2;1	QA070607	60:23.401	11	18	15	15
		QA170607	36.59				
		QA250607	60:35.881				
	2;2	QA100707	63:19.00	10	10	10	12
		QA250707	60:04.849				
	2;3	QA100807	63:52.581	24	21	16	12
		QA190807	23:24.830				
	2;4	QA040907	60:33.319	16	14	14	8
			Cumulative	**42**	**56**	**35**	**38**
Xhim	2;3	QG260805	61:56.833	6	3	5	16
	2;4	QG140905	61:01.959	33	24	22	16
		QG240905	29:24.647				
	2;5	QG101005	63:27.120	18	13	10	8
		QG251005	13.39.479				
	2;6	QG171105	67:20.326	10	5	9	8
	2;7	QG031205	63:45.294	7	8	13	12
		QG201205	18:02.027				
	2;8	QG050106	49:06.760	51	33	45	22
		QG190106	115:43.135				
	2;9	QG070206	41:09.512	50	14	34	13
		QG180206	62:34.393				
			Cumulative	**110**	**68**	**73**	**44**
Tum	2;7	QD260805	62:15.563	23	19	23	13
	2;8	QD140905	30:27:710	32	19	37	20
		QD240905	66:08.146				
	2;9	QD121005	65:21.492	32	5	15	6
		QD251005	29:07.002				
	2;10	QD181105	63:03.337	32	29	23	11
	2;11	QD031205	65:08.676	55	20	26	6
		QD191205	62:24.193				
	3;0	QD050106	62:29.017	15	2	8	2
		QD190106	62:33.409				
	3;1	QD040206	62:34.609	51	19	42	10
		QD180206	62:35.905				
			Cumulative	**137**	**81**	**106**	**33**

In Table 4.1 above I provided general information about ages, sessions, length of sessions, and verb types of the three Q'anjob'al children included in the present study. The total of

intransitive and transitive verbs in non-final and final positions is based on a cumulative frequency count. The data analyzed from Xhuw range from the age of 1;9 to 2;4; the data from Xhim range from the age 2;3 to 2;9; and the data from Tum range from the age of 2;7 to 3;1. The child data analyzed belong to different 7 month periods. These overlapping periods allowed me to explore a longer period of development than would be possible with three children at the same ages. Generally, two sessions were analyzed per month for each child as shown in the third column of Table 4.1. However, there are exceptions regarding the number and the length of sessions. Xhuw, for example, was recorded three times during the age of 2;1. Each recorded session was approximately an hour long [minutes:seconds.milliseconds], however in some cases some sessions did not last for full hour. In this study I grouped together the two sessions for each month for my analysis. Table 4.1 also shows that each child produced a different number of verb types in different ages. Xhuw produced more intransitive verbs in final position than in non-final position, while Xhim and Tum produced intransitive verbs in non-final position more often than in final position. Table 4.1 shows that the three Q'anjob'al children produced more types of intransitive verbs than transitive verbs. This fact may suggest that these children will acquire the morpho-syntax of intransitive verbs and later on with transitive verbs. The different number of verb types in non-final and final positions shows that these children did not produce the same verbs in both positions. For example around the age of (1;11), Xhuw produced the same number of intransitive verbs in non-final and final positions as shown in Table 4.2, but they are not the same verbs. Xhuw produced only the intransitive verbs *je'* 'can', *ok* 'enter', *taq'w-* 'answer', *toj* 'go', and *way* 'sleep' in non-final and final positions, while the rest of the verbs appear in one position or another.

Table 2. Xhuw's Intransitive Verbs

Xhuw (1;11)	-final	+final
	je'	je'
	ok	ok
	taq'w	taq'w
	toj	toj
	way	way
	aj	aj wan
	aq'.ok	ay pis
	aq'.ok-toq	i-aj-teq
	el	i-el-oq
	lo-w	pis
	pis	q'anjab'
	ten-ok	toj way
Total	12	12

The Q'anjob'al child data appear in the following format. The child utterance appears in the first line, and an adult equivalent headed by an equal sign (=), which appears in the second line. The asterisk (*) indicates omission of morphemes as shown in (1)a and (1)c. The exclamation point (!) indicates overextension of morphemes; the diagonal (/) identifies verb roots. The children's verb forms appear in bold as shown in (1). I follow this format of presenting the Q'anjob'al child data throughout the dissertation.

(1) a. may **toj** bebe. Xhuw (1;11) Indicative clause
= may-ø /toj bebe.
already-A3s go baby
'The baby went already.'

b. **ton** tu. Xhuw (1;11) Imperative clause
= /to-n *b'ay tu.
go-IMP PRE there
'Let's go over there.'

c. ja' lo **way**. Xhuw (2;0) Nominalized clause
= ja' lan ø/way-*i.
yes PROG sleep-NOM
'Yes, s/he is sleeping.'

d. **chak** kotele. Xhuw (2;3) Dependent clause
= ch-ø-ø/aq'.ok ko-tele.
INC-A3s-E3s-give.DIR E1p-television
'You turn on our television.'

4.2. Data Collection and Transcriptions

For data collection each Q'anjob'al child was visited every two weeks for a period of one year. In the present study I analyze data only for a period of seven months. The production data is based on spontaneous conversations between the Q'anjob'al child and his/her relatives and/or sometimes with a Q'anjob'al investigator. Each session was audio and video recorded by using two digital recorders, an Edirol-R1 and an Olympus. A Panasonic PV-GS150 video camera with a Sony microphone was used to record the videos. All the audio and video files were digitized for transcription.

The audio files were recorded in 16-bit WAV format; while the video were recorded first in mini-DV and then converted to MPEG format by using the program Adobe Premiere Elements. The audio files in WAV format and video files in MPEG format made it possible to use the Sound Scriber program for transcription. Most of the transcriptions are based on the video files in MPEG format due to the high quality of sound and the images from the video for accurate transcriptions. For the transcriptions I used the Q'anjob'al alphabet created by the Academia de las Lenguas Mayas de Guatemala (Acuerdo Gubernativo 1046-87).

4.2.1. Revision of Transcriptions

As a Principal Investigator for the acquisition of Q'anjob'al, I did most of the transcriptions that I explore in this study, and part of the revisions were made by my academic advisor. While four native speakers of Q'anjob'al were translating Q'anjob'al utterances to Spanish, they made

corrections as well, and while I coded the data I also made corrections. There was a period of training of seven native speakers of Q'anjob'al on how to interact with Q'anjob'al children when making video and audio recordings and how to transcribe the data collected by using the SoundScriber program. It was emphasized in the training that these speakers of Q'anjob'al should transcribe and give accurate adult interpretations, but in some cases a female transcriber in the project was reluctant to provide interpretations for some constructions that only male speakers use (2)a. These male constructions are instances of the overgeneralization of the classifier *ix* to other classifiers that exists in Q'anjob'al. In contrast, Q'anjob'al male transcribers showed a tendency of providing the equivalence of *ix* as *ix* as shown in (2)b. However, the advantage of having the female speaker not using for example *ix* as a male speaker does really showed a contrast where a Q'anjob'al speaking child overgeneralizes *ix* if one follows the female's transcription as in (2)b.

(2) a. wal pitay **ixh** kamyon. Female transcriber
= wal pitay **ch'en** kamyon
INTS small CL truck
'How small is the truck.'

b. a **ixh** winaX tu. Male transcriber
= a **ix** winaq tu
FOC CL man DEM
'It is that man (woman).'

4.2.2. Coding and Data Extraction

The data explored in this study were extracted from the Q'anjob'al data base by using different software programs. After each transcription was done, I used a program called QANFORM to reformat the Q'anjob'al transcriptions. This program produces a transcript with

four tiers: i) the child's production identified by his/her initial, ii) adult equivalences of the child's production, iii) a tier for morphological glossing of the child data, and iv) a tier for a Spanish translation of the Q'anjob'al data as shown in (3).

(3) QANFORM output

```
T     kach'aj mano.
=     qatx'aj hamano.
%mor  q-Ø-a/tx'aj *ha-mano.
%eng  you will wash your hands.
%spa  lavarás tu manos
```

I used a program called QANVERB to extract verb roots marked with a slash (/) from the QANFORM files. The QANVERB program extracts only verbs from the QANFORM files identified with a slash (/). The QANVERB program transfers all the verbs to Excel spreadsheets to organize the verbs in the imperative, indicative, nominalized, and dependent contexts as shown in (4).

(4) QANVERB output

VERBS	GLOSSING	CHILD FORMS	ADULT FORMS
ay	'to get down'	am pixh xhi.	/ay-an /pis /xhi.
	a pixh.	/ay-*an /pis.	+ay-an+pis
	'existential'	ay chiken.	/ay txikin.
	ay mimi'.	/ay mimi'.	+ay+mimi'

To check other forms that are left out of QANVERB, I used another program called QANCORD, which groups each lexical item and all its contexts of use. In (5) for example, the negation marker *k'am* does not appear with a verb at all. All these programs are really good when just counting the frequency of use of any item, but when it comes to contexts sometimes it

is not clear. Therefore I checked the original transcriptions and/or coding when the context was needed to make an interpretation.

(5) k'am
k'am naq.[k'am naX.]
k'am.['am.]
k'am teyo *s-karo.[kam teyo kalo.]
k'am tzet.['am chet.]

4.2.3. Criteria for Identifying Verb Forms and Clause Types

The interpretation of the clause types where the verbs appeared was based on situational contexts as well as the equivalence and the interpretation of an adult form given by a Q'anjob'al transcriber.

For example in (6)a, we see that after the non-verbal predicate *pum* 'onomatopoeic of falling', Tum did not produce the correct verb inflection of the nominalized intransitive verb *aj* 'go up'. She produced the incompletive tense/aspect *ch-* and the absolutive morpheme for third person (ø) as shown in (6)a; instead of omitting the incompletive aspect and using the ergative morpheme *y-* (6)b.

(6) a. pum **ch'aj** ch'en. Tum (2;8) Nomonalized > Indicative
= /pum !ch-ø-/'aj ch'en.
pum INC-A3s-go.up CL
'Pum, it (metal) goes up.'

b. pum **y/aj** ch'en. Nominalized
pum-ø E3s-go.up CL
'Pum, it (metal) goes up.'

The verb inflection in Q'anjob'al is not all clear. For example, to what extent have these Q'anjob'al children acquired the ergative morpheme for second person given that it is a zero

morpheme? However, although this morpheme is a zero form, it causes vowel change on the vowel initial transitive verb where it is attached (Raymundo González, et. al., 2000; Mateo Pedro, to appear). Then, the only resource that we are left with is whether or not these children show vowel change on the verb. The data in (7)a from Xhuw, (8)a from Xhim, and (9)a from Tum show that these children are aware of the vowel change of the transitive verb when inflected by the ergative morpheme of second person singular. Further evidence of the acquisition of the second person singular ergative before vowels is that these children did not show vowel change with other ergative morphemes as shown in (7)b for Xhuw, in (8)b for Xhim, and (9)b for Tum. This finding supports Mateo Pedro's (2005, to appear) finding for the acquisition of verb inflection in Q'anjob'al. In the current data, I did not find many cases of vowel change of transitive verbs in the three children's data, but with the data below it is sufficient to say that these children are aware of this morpho-phonological change.

(7) Xhuw's vowel change

a. **xhel** amama. — Xhuw (2;3) — Second person singular
ch-ø-ø/el ha-mama
INC-A3s-E2s-see E2s-mother
'You see your mother.'

b. ja **wil** lolexh. — Xhuw (2;3) — Non-second person singular
= ja' *q-ø-w/il flores
yes POT-A3s-E1s-see flowers
'Yes, I will see the flowers.'

(8) Xhim's vowel change

a. **chela'**? — Xhim (2;3) — Second person singular
= ch-ø-ø/el-a'?
INC-A3s-E2s-see-RTV
'Do you see it?'

b. pipH **wila'**. — Xhim (2;3) — Non-second person singular
= pip *ch-ø-w/il-a'
car INC-A3s-E1s-see-RTV
'The car I see.'

(9) Tum's vowel change

a. icham **etoq** un tu. Tum (2;8) Second person singular
= icham *ch-ø-ø/e-toq jun tu
old man INC-A3s-E2s-take-DIR one DEM
'Old man, you take that one.'

b. ja **witoj** b'a la. Tum (2;8) Non-second person singular
= ja *ch-ø-w/i-toq b'ay la
yes INC-A3s-E1s-take-DIR PRE DEM
'Yes, I take it over there.'

In cases like (10)b, Xhuw used the ergative morpheme instead of an absolutive morpheme, but with three possible interpretations. First, it might be that Xhuw did not produce the aspect of the intransitive verb, which makes the absolutive morpheme look like an ergative morpheme; especially both absolutive and ergative morphemes for first person singular, which are homophonous. Second, there is no conditioning context for the nominalized verb. A nominalized intransitive verb has to be headed by a matrix clause and cannot appear alone as in (10)b. The other interpretation is that Xhuw overextended ergative morphemes to absolutive morphemes in indicative intransitive contexts.

(10) a. pan lan lo'. Xhuw (2;0) Bare root
= pan lanan-ø *s/lo-*hon-*i.
bread PROG-A3s E3s-eat-INTR-NOM
'Bread, it is s/he eating.'

b. ha-way Xhuw (2;0) No conditioning context
= ha-way-*i.
E2s-sleep-NOM
'Your sleep' (Intended= you are sleeping).

Xhuw produced more ergative forms in final position (Table 5.5). In some cases, Xhuw used the expected matrix clause that conditions nominalization as in (10)a, but she produced the intransitive verb as a bare root form, which makes it harder to assess the acquisition of

nominalization. As for absolutive morphemes, it was difficult to assess the acquisition of this type of morpheme given that most of the children's absolutive morphemes occurred as third person singular, which is a zero morpheme. In the present study I did not include the analysis of this morpheme.

4.3. Analyses

To evaluate the acquisition of the inflection of intransitive and transitive verbs in imperative, indicative, nominalized, and imperative clauses in Q'anjob'al, I followed four types of analyses: Verb Form Analysis, Frequency Analysis, Productivity Analysis, and Error Type Analysis. The Verb Form Analysis helps us to assess the types of verb forms that the children produced in each type of clauses. Furthermore, it helps us to assess whether or not Q'anjob'al children use a verb form as a default form in the four types of clauses. For the Verb Form Analysis I followed the forms in (11) (Pye, et. al., 2008).

(11) Verb forms
   a. complete form
   b. omission of aspect
   c. omission of absolutive
   d. omission of ergative
   e. bare stem
   f. bare root
   g. overgeneralization

To illustrate the variables in (11), I present data from Xhuw in which some of these variables apply as shown in (12). I credited the child for producing the complete form if s/he produced all the inflectional morphemes required on the verb as shown in (12)a. The omission of aspect means that the child produced the other inflectional morphemes, but s/he did not produce

aspectual prefix as in (12)b. The bare stem means that only the root verb and a suffix were produced by the child (12)c. In the stem criterion, derived stems such as stems containing a passive, antipassive, or accusative suffix were counted as stems. The bare root means that the child did not produce any inflectional morpheme other than the verb root (12)d. I included in my analysis only the verb forms that were intelligible in their contexts. Therefore, forms that did not meet this requirement were not included in the analysis.

(12)	a.	**choki.** = ch-ø/oq'-i. INC-A3s-cry-IV 'S/he/it cries.'	Xhuw (2;0)	Entire complex
	b.	**ntohi**. = *ch-in/toj-i. INC-A1s-go-IV 'I leave.'	Xhuw (1;11)	Omission of aspect
	c.	**ok'i.** = /*ch-ø/oq'-i. INC-A3s-cry-IV 'S/he/it cries.'	Tum (2;7)	Bare stem
	d.	**way.** = *ch-ø/way-*i. INC-A3s-sleep-IV 'S/he/it sleeps.'	Xhuw (1;11)	Bare root

The Frequency Analysis is commonly applied in first language acquisition studies. This analysis states that a child has acquired an aspect of the grammar (e.g. inflection) if s/he uses it in more than 90% of its obligatory contexts (Brown, 1973). In the frequency analysis of the intransitive verb inflection in Q'anjob'al I follow the 75% criterion and not the 90% given that most first language acquisition studies apply the 75% criterion (Demuth, 1998). Given the fact that this analysis has its own limitations to account for the acquisition of the intransitive verb

inflection in Q'anjob'al, other methods were needed to assess the acquisition of the intransitive verb inflection in Q'anjob'al, e.g. productivity.

In this study I also evaluate the productivity and default form of the three children's verb forms in the four types of clauses. However, productivity and default forms are understood and defined from approaches to approaches. For example within the Single Mechanism Approach, productivity and default are correlated in the sense that both are the results of one single process, high frequency. In other words, an item is productive or it becomes the default form if it occurs with high frequency. Others like Pinker (1984) state that the productivity of an item is due to the regularity of the inflection. Other approaches like the Symbolic Model (e.g. Bybee, 1995) view a default form as the result of regular inflection. For further discussion of productivity and default forms see Al-Shboul (2007). In this study I do not go into details of defining productivity and default forms for Q'anjob'al. Therefore I follow Gathercole, Sebastián, and Soto's (1999) work on productivity of the verb inflection in Spanish as discussed below. Productivity can be translated as a creative aspect of language acquisition (Fromkin, Rodman, and Hyams, 2007), in that a child does not acquire a language just by repeating a form over and over, but combines this form with other forms. The productivity criterion helps to evaluate if the children acquire the verbal inflection with productivity, without productivity, or as frozen forms as the Verb Island Hypothesis might predict (Tomasello, 2003). The productivity criterion is also helpful for a contrastive analysis.

According to Gathercole, et. al. (1999), productivity has been defined slightly differently by different authors. For example Radford, (1990) makes a distinction between acquisition and mastery. His mastery criterion is similar to Brown's (1973), which says that a child has acquired an inflectional morpheme if s/he uses it in a 90% correct use in obligatory contexts. Pine &

Lieven (1993) when evaluating productivity introduce three criteria: frozen phrases, intermediate, and constructed, while Plunkett (1993) suggests using phonetic accuracy to determine productivity.

However, studies on the acquisition of the verbal morphology in Romance languages (Pizzuto & Caselli, 1994; Fernández Martínez (1994; and Gathercole, et. al., 1999) have defined productivity based on the use of a verb root plus its inflectional morphology. There is productivity if an inflectional morpheme is used with two different verb roots or a verb root is used with two different inflectional morphemes. For the acquisition of the verb morphology in Q'anjob'al, I follow Pizzuto & Caselli (1994), Fernández Martínez (1994), and Gathercole, et. al.'s (1999) productivity criterion, but use the following three criteria: i) type of clauses, ii) type of aspect, specifically for indicative clauses, and iii) person and number. In other words, I evaluate whether a verb appears at different ages with different clause types, with different aspect types, and with different person marker, or in just one clause type, one aspect type, or one person marker. As mentioned above in some cases the three children produced similar verb types in non-final and final positions, but at the same time, they produced different verb types that are not the same in both positions. Thus, one may expect the three Q'anjob'al children to use the same verb type, but in different clause types (e.g. indicative, nominalized, imperative, and dependent), or these children may use different verb types, but these verbs do not appear in the same type of clauses.

The data in (13) from Tum illustrate the productivity criterion. In (13)a through (13)c, the intransitive verb *ay* appears in indicative contexts, but with the following productive distribution. In (13)a, it appears with first person singular and in the incompletive aspect, although the marker of this aspect is missing. When we compare (13)a with (13)b, we see that in (13)b, *ay* appears

with first person singular, but in the potential aspect (aspect type criterion). If we compare (13)a-b with (13)c, we can see that in (13)c, the incompletive aspect is marked and it appears with third person singular in contrast to (13)a. Furthermore, the intransitive verb *ay* takes the status suffix *-i*. In (13)d, *ay* appears as a complement of the transitive verb *iq* 'to carry'. It takes the suffix *-oq* to mark its status as being a complement of the main verb. Tum used *ok* in the complement clause in (13)d to answer one of the Q'anjob'al assistants' questions: *Tom k'am chyiq ay nab' tu?* 'Does not she get wet from the rain?'

(13) a. hin **aytoq**. Tum (2;7)
= *chin /ay-toq
INC-A1s go-DIR
'I get down.'

b. kin **aytoX**. Tum (2;11)
= q-in /ay-toq.
POT-A1s go-DIR
'I will get down.'

c. **ch'ayi**. Tum (2;8)
= ch-ø/ay-i.
INC-A3s-go-IV
'S/he/it gets down.'

d. yiX **ayoX**. Tum (2;10)
= y/iq /ay-oq.
E3s-carry DIR-DEP
'S/he got wet.'

In addition to the analysis described above, I provide an Error Analysis for further evidence of the children's productivity of their verb inflection in Q'anjob'al.

4.4. Stage of Documentation of the Acquisition of Q'anjob'al

Most of the studies in Mayan languages focus on adult grammar, which is true for Q'anjob'al. Among the 30 Mayan languages spoken in Mexico, Belize, Honduras, and Guatemala (England, 1994), only Yucatec (Carrillo Carreón, 2005; Pfeiler, 2003), Tzotzil (de León, 1999a, 1999b), Tzeltal (Brown, 1998, 2007), and K'iche' (Pye, 1983; Pye, 1990, 1991a, 1991b, 1993, 1998, 2002, 2007) have been studied. The study of the acquisition of Q'anjob'al began only recently (Mateo Pedro, 2005, to appear). Funding from the International Fellowship Program and CIRMA and from the National Science Foundation have allowed me to document the acquisition of Q'anjob'al using cross-sectional and longitudinal designs. From my cross-sectional design I have approximately 30 hours of recordings from 8 children from the age range 2;6-3;6 [years;months] acquiring Q'anjob'al. From these recordings I have only 8 hours transcribed. From the project 'Documenting Mayan Language Acquisition' funded by the National Science Foundation with Professor Clifton Pye as the Principal Investigator, I have approximately 150 hours of recordings from 5 children. From this number of recordings, 90 are transcribed; 36 are codified and ready for analysis.

Chapter 5

Intransitive Verbs

Introduction

This chapter is devoted to describing how Q'anjob'al children acquire the inflection of intransitive verbs in imperative, indicative, nominalized, and dependent clauses. For the description of these children's inflection of intransitive verbs I evaluate their verb forms, the frequency of the intransitive inflections, productivity, and types of errors. The chapter is divided into the following sections. In section 1 I present the children's clause types and verb forms. In section 2 I discuss the frequency of aspect, absolutive and status suffixes marked on intransitive verbs. In Section 3 I evaluate the productivity of the intransitive verbs in each clause type. For further evidence of these children's productivity of intransitive inflection, in section 4 I evaluate the types of errors they produced. In section 5 I present my conclusion for the acquisition of the intransitive inflection.

5.1. Clause Types and Verb Forms

In this section I present the distribution of the children's intransitive verbs in four types of clauses: imperative, indicative, nominalized, and dependent in non-final and final positions. For this analysis, I present the data child by child. Each child produced intransitive verbs in different types of clauses and with different degrees of frequency. The numbers reported in each figure are all tokens.

I also present the intransitive verb forms that the three children produced in each clause type as summarized in Table 5.1. This table suggests that the imperative verb form defines a "default" form in that both the imperative and the dependent forms have the fewest inflections. The

imperative, unlike the dependent form, maintains its status suffix in non-final position. Since the imperative form has only a single inflection that does not change with position, it is the simplest form, and the one form that children might acquire early and overextend to other contexts. Given that the imperative form shows a regular inflection, theories like the Symbolic Model (e.g. Bybee, 1995) predict that Q'anjob'al children may assume it as the default form. This prediction is similar to Salustri and Hyams (2003) who argue that imperative verb forms resemble non-finite verb forms.

Table 5.1. Intransitive Verb Forms and Clause Types

Features	Imperative	Indicative	Nominalized	Dependent
Aspect	-	+	-	-
Absolutive	-	+	-	-
Ergative	-	-	+	-
Status (*-i*)	-	+	+	-
Status *-an*	+	-	-	-
Status (*-oq*)	-	-	-	+

To evaluate the children's intransitive verb forms I followed the types shown in (1) (Pye, et. al., 2008). I credited the child for producing the entire complex if s/he produced all the inflectional morphemes required on the verb. The omission of aspect means that the child produced the other inflectional morphemes, but not the aspectual prefix. With the omission of absolutive criterion, the child does not produce the absolutive morpheme, but the other morphemes remain. The bare stem means that only the root verb and a status suffix were produced by the child, while the bare root means that the child did not produce any inflectional morpheme other than the verb itself.

(1) Intransitive verb forms
   a. entire complex
   b. omission of aspect
   c. omission of absolutive

d. bare stem
e. bare root

The use of these category labels varies with the clause type in which the verb appears. The children were given credit only for using the entire complex in indicative contexts since this is the only context in which verbs are used with the aspectual prefix. Recall that nominalized intransitive verbs are not inflected for aspect and take ergative agreement rather than absolutive agreement. I labeled the children's forms that contain both the ergative prefix and the verb root as *-aspect*, even though they constitute complete verb forms in order to compare their form with the verb forms produced in indicative contexts. If they were labeled entire forms, the category would include indicative forms with an aspect prefix and nominalized forms without aspect.

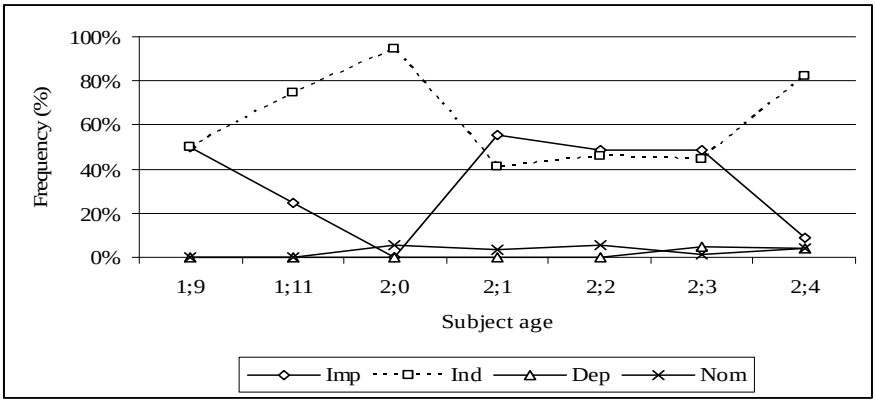
The suffix *-i* is used as a status suffix in indicative intransitive clauses as well as a nominalizing suffix in nominalized contexts. This suffix is dropped in non-final position in both types of clauses. Imperative verbs were categorized as bare stems since they contain only the imperative status suffix and lack aspectual and agreement prefixes. Dependent forms also lack prefixes for aspect and agreement and were categorized as bare stems when the status suffix appeared and as bare roots without the dependent status suffix. Dependent verbs in final position have the status suffix *-oq*. Children should produce stem forms rather than root forms in final position with dependent clauses. Thus, the category labels apply strictly to the forms produced across the contexts rather than to the forms that might be appropriate to specific contexts. This labeling makes it possible to compare verb forms across the contexts of use.

5.1.1. Xhuw's Clause Types and Verb Forms

5.1.1.1. Xhuw's Clause Types

At 1;9 (through 2;4), most of Xhuw's intransitive verbs in non-final position appeared in indicative and imperative clauses (Figure 5.1). Nominalized and dependent clauses appeared around the age of 2;0, but nominalized marginal to the age of 2;4.

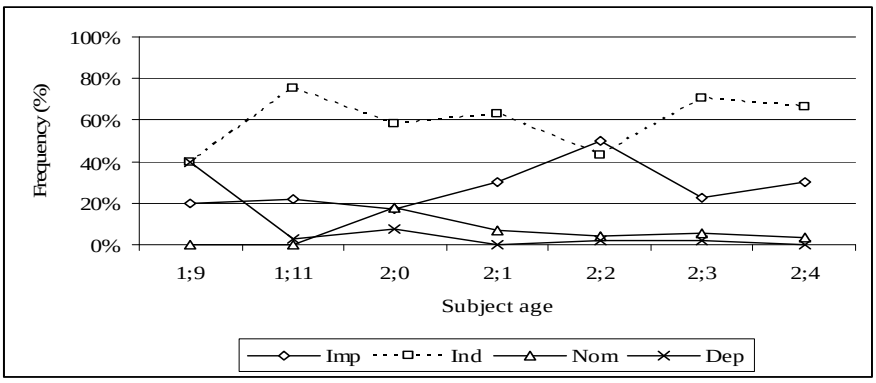
Figure 5.1. Xhuw's Intransitive Clauses: Tokens in Non-final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (307)
Imp	1	7	0	31	18	59	4	120 (39%)
Ind	1	21	17	23	17	54	37	170 (55%)
Nom	0	0	1	2	2	2	2	9 (3%)
Dep	0	0	0	0	0	6	2	8 (3%)

Xhuw's intransitive verbs in final position appeared most frequently in indicative and imperative clauses (Figure 5.2). In this position, Xhuw produced twice as many nominalized intransitive clauses as dependent clauses. Xhuw produced most of her verbs in final position and produced more nominalized contexts than Xhim and Tum. In general, Xhuw produced imperative and indicative clauses more frequently than nominalized and dependent clauses in both non-final and final positions.

Figure 5.2. Xhuw's Intransitive Clauses: Tokens in Final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (396)
Imp	1	8	21	18	23	21	9	101 (26%)
Ind	2	28	72	38	20	66	20	246 (62%)
Nom	0	0	22	4	2	5	1	34 (9%)
Dep	2	1	9	0	1	2	0	15 (4%)

5.1.1.2. Xhuw's Verb Forms

5.1.1.2.1. Imperative Intransitive Verb Forms

In non-final position (Table 5.2), Xhuw produced 78% of her intransitive verb forms as bare roots and 22% as bare stems. Xhuw produced imperative verbs with the following features. In (2)a, part of the intransitive verb *ay* 'come_down' and the imperative suffix *-an* were missing; in (2)b, the same intransitive verb *ay* and the imperative suffix *-an* merged into *am*; while in (2)c, the intransitive verb *saqch-* 'to play' was produced, but the final sound of the imperative suffix *-an* was dropped.

(2) a. **a** pixh. Xhuw (2;1) Bare root
= /ay-*an /pis-*an-*oq
go-IMP sit-POS-DEP
'Sit down.'

b. **am** pixh xhi. Xhuw (2;2) Bare stem
= */ay-an /pis /xhi
go-IMP sit said
'Sit down, s/he said.'

c. **sacha** lonal. Xhuw (2;4) Bare stem
= /saqch-an ronal
play-IMP Ronal
'Play, Ronald.'

Table 5.2. Xhuw's Imperative Intransitive Verb Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
stem	1	1	0	10	2	4	4	22 (22%)
root	0	0	0	3	16	59	0	78 (78%)

In final position (Table 5.3), Xhuw produced 62% of intransitive verbs as bare stems (3)a, and 38% as bare roots (3)c. I consider the form *ton* in (3)a as an imperative form given that in indicative clauses it has the form *toj* as shown in (3)b. Xhuw produced a higher frequency of bare stems than bare roots in contrast to imperative verb forms in non-final position (Table 5.2).

(3) a. **ton**. Xhuw (1;11) Bare stem
= /to-n
go-IMP
'Let's go.'

b. **toh**i ewi. Xhuw (1;11) Bare stem
= ø/toj-!i ewi
A3s-go-IV yesterday
'S/he went yesterday.'

c. **pixh**. Xhuw (2;2) Bare root
= /pis
sit
'Sit'.

Table 5.3. Xhuw's Imperative Intransitive Verb Forms: Tokens in Final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
stem	0	8	15	8	15	12	3	61 (62%)
root	3	1	6	8	8	9	2	37 (38%)

5.1.1.2.2. Indicative Intransitive Verb Forms

Xhuw's indicative intransitive verbs appeared in 69% (119/172) as bare roots (4)a and in 19% (33/172) as bare stems (4)b in non-final position. As Figure 5.3 shows, there is a higher proportion of intransitive bare roots than intransitive verb stems in contrast to the entire complex (4)c forms (7% (12/172)).

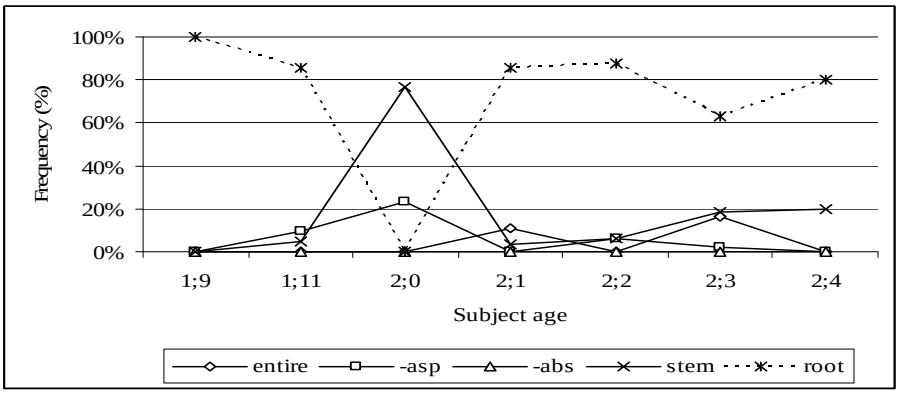
(4) Non-final intransitive verb forms

a. ay **toh** talo! Xhuw (1;11) Bare root
= ay *ch-ø/toj *ch'en karro!
ay INC-A3s-go CL car
'Ay, the car is leaving!'

b. **toh**i ewi. Xhuw (1;11) Bare stem
= ø/toj-!i ewi.
A3s-go-IV yesterday
'S/he went yesterday.'

c. **choj** no mi chapapo. Xhuw (2;1) Entire complex
= ch-ø/toj no mi sapato.
INC-A3s-go CL my shoe
'My shoe leaves.'

Figure 5.3. Xhuw's Indicative Intransitive Verb Forms: Tokens in Non-final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (172)
entire	0	0	0	3	0	9	0	12 (7%)
-asp	0	2	4	0	1	1	0	8 (5%)
-abs	0	0	0	0	0	0	0	0 (0%)
stem	0	1	13	1	1	10	7	33 (19%)
root	1	18	0	24	14	34	28	119 (69%)

In final position (Figure 5.4), Xhuw produced 23% (54/239) of intransitive verbs as bare roots (5)a and 67% (159/239) of bare stems (5)b. She did not produce aspect and agreement, but she normally used the root intransitive verbs plus the status suffix in final position as shown in (5)b and (5)c. She produced more cases of bare stems and bare roots than Xhim and Tum.

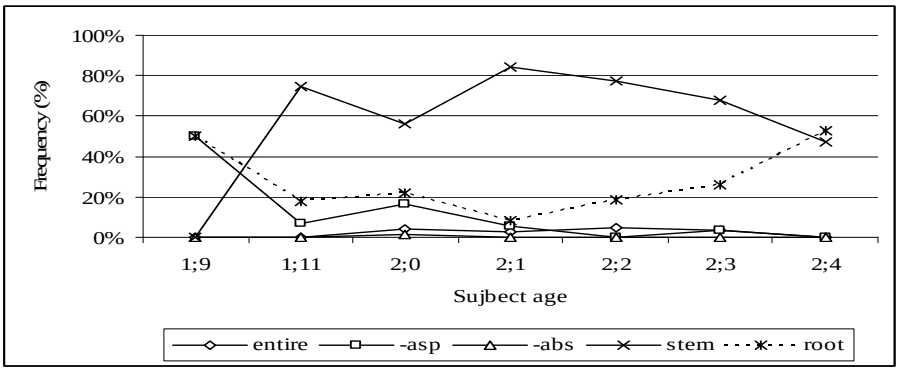
(5) Final verb forms

a. **way.** Xhuw (1;11) Bare root
= *ch-ø/way-i
INC-A3s-sleep-IV
'S/he/it sleeps.'

b. **tohi.** Xhuw (1;11) Bare stem
= *ch-ø/toj-i
INC-A3s-go-IV
'S/he/it leaves.'

c. **ntohi**. Xhuw (1;11) Omission of aspect
= *ch-in/toj-i
INC-A1s-go-IV
'I leave.'

Figure 5.4. Xhuw's Indicative Intransitive Verb Forms: Tokens in Final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (239)
entire	0	0	3	1	1	2	0	7 (3%)
-asp	1	2	11	2	0	2	0	18 (8%)
-abs	0	0	1	0	0	0	0	1 (0.42%)
stem	0	21	38	32	17	42	9	159 (67%)
root	1	5	15	3	4	16	10	54 (23%)

5.1.1.2.3. Nominalized Intransitive Verb Forms

In non-final position, Xhuw produced two cases of bare roots (6)a and two cases of bare stem (6)b forms in nominalized context (Table 5.4). Xhuw produced more ergative forms in final position (Table 5.5) as shown in (7).

(6) a. la **low** hin. Xhuw (2;4) Independent pronoun
= lan hin/lo-w-*i.
PROG E1s-eat-AP-NOM
'I am eating.'

b. a way lah.[35] Xhuw (2;0) Nominalized root
= lan ø/**way**-*i la.
PROG E3s-sleep-NOM DEM
'Look, s/he is sleeping.'

c. m **lowi** kux. Xhuw (2;2) Nominalized stem
= *lanan ø/**lo**-**w**-!i (kux).
PROG E3s-eat-AP-NOM (kux).
'S/he is eating ( ).

(7) haway Xhuw (2;0) No conditioning context
= ha-way-*i.
E2s-sleep-NOM
'Your sleep' (Intended= you are sleeping).

Table 5.4. Xhuw's Nominalized Intransitive Verb Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
-aspect	0	0	1	0	0	0	0	1 (20%)
stem	0	0	0	0	1	0	1	2 (40%)
root	0	0	1	0	0	0	1	2 (40%)

Table 5.5. Xhuw's Nominalized Intransitive Verb Forms: Tokens in Final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
-aspect	0	0	21	2	1	4	1	29 (85%)
stem	0	0	0	0	0	1	0	1 (3%)
root	0	0	0	2	1	1	0	4 (12%)

[35] The form *a* considered as an equivalent to *lanan* is problematic for the analysis of acquisition of nominalization and other syntactic constructions given that the vowel replaces other forms such as *k'am* to mark negation (Mateo Pedro, 2010).

5.1.1.2.4. Dependent Intransitive Verb Forms

Xhuw produced 90% of her intransitive verbs as bare roots and 10% as bare stems in non-final position in dependent contexts (Table 5.6). The high frequency of her bare roots as in (8)a is due to the use of the reduced form *ak*, which is a combination of *aq'* 'go give' as the main verb and *ok* 'to enter' as the dependent verb. In (8)b, the imperative form of the intransitive verb *ay* 'to go_down' takes the positional verb *pis* 'to sit' as its dependent, which lacks the positional suffix *-an*.

(8) a. **chak** kotele. Xhuw (2;3) Bare root
= ch-ø-ø/aq'.ok ko-tele
INC-A3s-E2s-give.DIR E1p-television
'You turn our television on.'

b. ay **pixh** roral. Xhuw (2;4) Bare root
= /ay-*an /pis-*an ronal
POS-IMP seat-POS Ronald
'Sit down, Ronald.'

Table 5.6. Xhuw's Dependent Intransitive Verb Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
stem	0	0	0	0	0	6	0	6 (10%)
root	0	0	0	0	0	52	1	53 (90%)

In final position, Xhuw produced 33% of intransitive verbs as bare stems (9)a and 67% as bare roots (9)b in dependent contexts (Table 5.7). When she produced bare stems she omitted other morphemes that were required on the intransitive verb. In (9)a, she did not produce the positional morpheme *-an*, but she added the dependent suffix *-oq*.

(9) a. an **taloj.** Xhuw (2;0) Bare stem
= /ay-*an /tel-*an-oq
go-IMP lay.down-POS-DEP
'Lay down.'

b. ahan **pixh.** Xhuw (2;0) Bare root
= /ay-an /pis-*an-*oq
go-imp sit-POS-DEP
'Sit down.'

Table 5.7. Xhuw's Dependent Intransitive Verb Forms: Tokens in Final Position

Age	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
Stem	0	0	3	1	0	1	0	5 (33%)
Root	2	1	6	0	0	1	0	10 (67%)

5.1.1.2.5. Summary

Xhuw produced more intransitive verbs in imperative clauses than Xhim or Tum. Xhuw's data indicate that indicative and imperative clauses appeared around the same age (1;9). Nominalized and dependent clauses appeared later and with a lower frequency; however, both clause types appeared around the same age, 2;0. This acquisition order for the four types of clauses suggests that Q'anjob'al children may have more difficulties in producing nominalized and dependent verbs.

As for verb forms, in both non-final (Table 5.8) and final (5.9) positions, Xhuw produced intransitive verbs as bare stems and bare roots in imperative, indicative, nominalized, and imperative clauses. However, although she produced bare stems in the four types of clauses, she recognized the distinct morphology of each type of clause. In indicative clauses she produced aspect and agreement, although in a lower frequency, but these prefixes are expected on the intransitive verbs. Similarly, in nominalized clauses, she produced intransitive verbs that lack aspect. Her production of bare stems did not prevent her from using the correct status suffix of each clause type as shown in section 2. Tables 5.8 and 5.9 show that Xhuw produced three basic verb forms: i) imperative/indicative, ii) nominalized, and iii) dependent.

Table 5.8. Intransitive Verb Forms: Non-final position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	7%	0%	0%
-aspect	0%	5%	20%	0%
-absolutive	0%	0%	0%	0%
bare stem	22%	19%	40%	10%
bare root	78%	69%	40%	90%

Table 5.9. Intransitive Verb Forms: Final Position

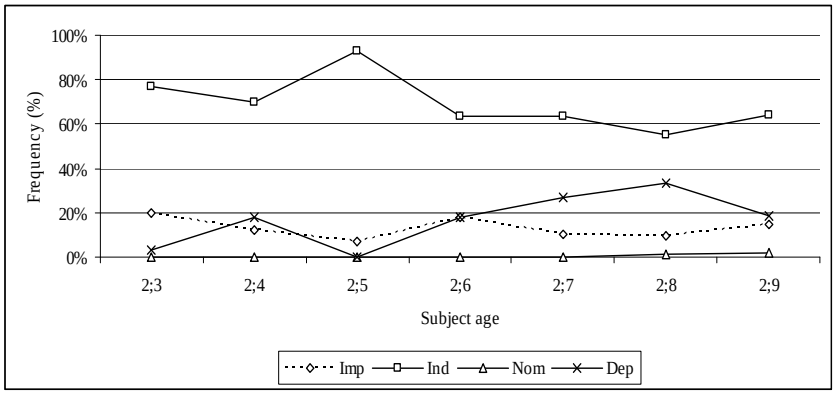
	Imperative	Indicative	Nominalized	Dependent
entire	0%	7%	0%	0%
-aspect	0%	8%	85%	0%
-absolutive	0%	0%	0%	0%
bare stem	62%	67%	3%	33%
bare root	38%	23%	12%	67%

5.1.2. Xhim's Clause Types and Verb Forms

5.1.2.1. Xhim's Clause Types

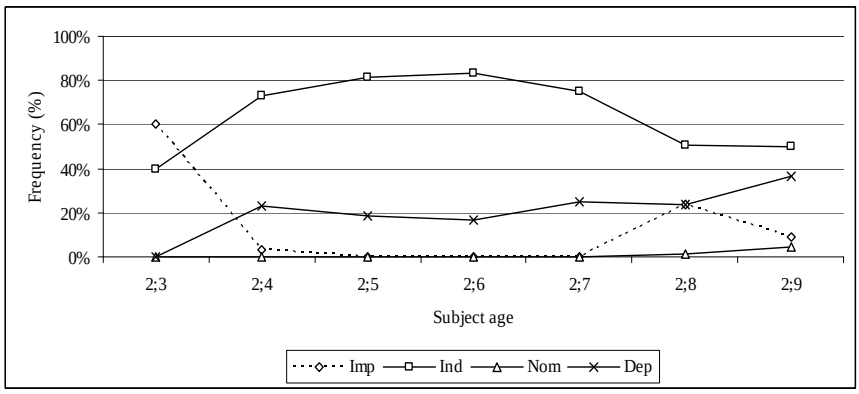
Xhim's intransitive clauses in non-final (Figure 5.5) and final (Figure 5.6) positions appeared most often in indicative clauses followed by dependent and imperative clauses. Xhim produced most of his intransitive verbs in non-final position.

Figure 5.5. Xhim's Intransitive Clauses: Tokens in Non-final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (519)
Imp	6	13	4	2	3	13	23	64 (12%)
Ind	23	74	53	7	19	72	99	347 (67%)
Nom	0	0	0	0	0	2	3	5 (1%)
Dep	1	19	0	2	8	44	29	103 (20%)

Figure 5.6. Xhim's Intransitive Clauses: Tokens in Final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
Imp	3	3	0	0	0	16	2	24 (10%)
Ind	2	63	26	5	9	34	11	150 (65%)
Nom	0	0	0	0	0	1	1	2 (1%)
Dep	0	20	6	1	3	16	8	54 (23%)

5.1.2.2. Xhim's Verb Forms

5.1.2.1.1. Imperative Intransitive Verb Forms

In non-final position (Table 5.10), Xhim produced 96% of imperative intransitive verbs as bare stems (10)a and 4% as bare roots (10)b. In both cases, he used the imperative suffix *-an* to indicate the imperative form of *el* (10)a and *ay* (10)b. Xhim also produced the imperative suffix *-an* plus a directional suffix as shown in (10)c.

(10) a. **elan** chi'. Xhim (2;5) Bare stem
= /el-an tx'i'
exit-IMP dog
'Get of here, dog.'

b. ayan **pixh** wetoX pap. Xhim (2;9) Bare stem
= /ay-an /pis-*an w-etoq pap
go-IMP sit-POS E1s-RN dad
'Sit down with me dad.'

c. **okanteX**. Xhim (2;4) Bare stem
= /ok-an-teq
enter-IMP-DIR
'Come on in.'

Table 5.10. Xhim's Imperative Intransitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
Stem	6	17	4	2	2	12	21	64 (96%)
Root	0	0	0	0	0	1	2	3 (4%)

In final position (Table 5.11), Xhim produced 100% of bare stems in imperative context. He appears to be more advanced than Xhuw in the production of imperative verbs, although he still occasionally overgeneralized the non-final constraint to the imperative suffix.

Table 5.11. Xhim's Imperative Intransitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
Stem	3	2	0	0	0	9	2	16 (100%)
Root	0	0	0	0	0	0	0	0 (0%)

5.1.2.1.2. Indicative Intransitive Verb Forms

In non-final position (Figure 5.7), Xhim produced more cases of the entire complex (11)a and omission of the aspect morpheme (11)b compared to Xhuw. He produced 56% (186/333) of intransitive verbs as bare roots (11)c and 19% (64/333) as bare stems (11)d.

(11) Non-final intransitive verb forms

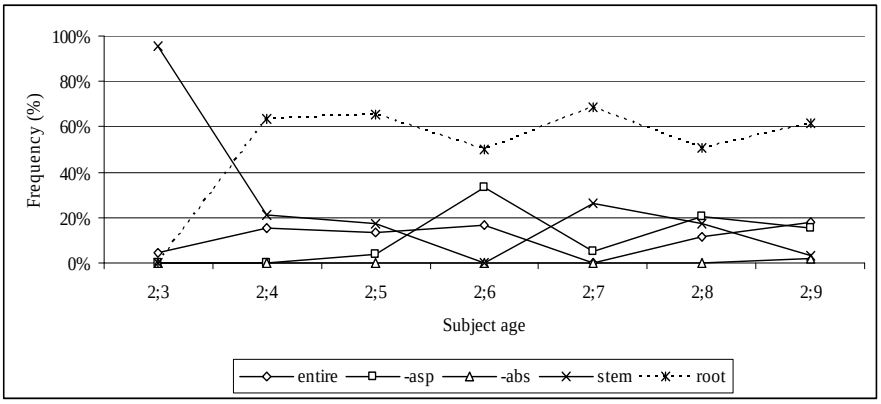
a. **chel** wich. Xhim (2;3) Entire complex
= ch-ø-/'el witz
INC-A3s-exit hill
'S/he/it falls from the hill.'

b. **hinwachi.** Xhim (2;5) Omission of aspect
= *ch-in-/watx'-*j-i
INC-A1s-good-DER-IV
'I am being cured.'

c. **pil** nan... Xhim (2;4) Bare root
= *ch-ø-/b'il nani...
INC-A3s-move now
'S/he/it moves now.'

d. **komi** wich. Xhim (2;4) Bare stem
= *x-ø-/kam-!i witz.
COM-A3s-die-IV hill
'S/he/it died in the hill.'

Figure 5.7. Xhim's Indicative Intransitive Verb Forms: Tokens in Non-final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (333)
entire	1	10	7	1	0	8	17	44 (13%)
-asp	0	0	2	2	1	14	15	37 (11%)
-abs	0	0	0	0	0	0	2	2 (1%)
stem	21	14	9	0	5	12	3	64 (19%)
root	0	42	34	3	13	35	59	186 (56%)

In non-final position (Figure 5.8), Xhim produced 43% (97/227) of intransitive verbs as bare stems (12)a and 44% (99/227) as bare roots (12)b. He also produced some verbs that lack an aspect marker as illustrated in (12)c.

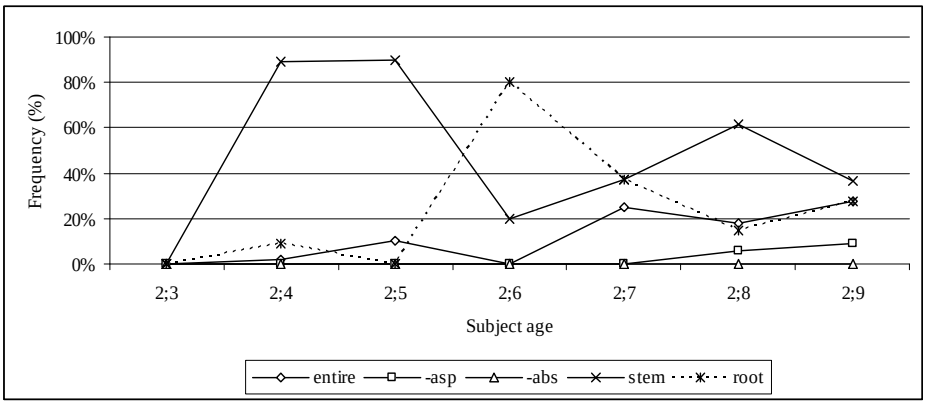
(12) Final verb forms

a. **kaji.** Xhim (2;4) Bare stem
= *ch-ø/q'aj-i
INC-A3s-break-IV
'It breaks.'

b. **toj**. Xhim (2;6) Bare root
= *ch-ø/toj-*i.
INC-A3s-go-IV
'S/he/it leaves.'

c. **hin ayteq**. Xhim (2;8) Omission of aspect
= *ch-in /ay-teq.
INC-A1s go-DIR
'I get down.'

Figure 5.8. Xhim's Indicative Intransitive Verb Forms: Tokens in Final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (227)
entire	0	1	2	0	2	6	3	14 (6%)
-asp	0	0	0	0	0	2	1	14 (6%)
-abs	0	0	0	0	0	0	0	3 (1%)
stem	0	50	18	1	3	21	4	97 (43%)
root	0	5	0	4	3	5	3	99 (44%)

5.1.2.1.3. Nominalized Intransitive Verb Forms

Xhim produced a few nominalized intransitive verbs (13)a. In this example he showed a clear shift from absolutive to ergative marking. The nominalized intransitive verb is conditioned by the progressive *lanan*. Although Xhim correctly produced an ergative prefix, he adds the suffix -*il* after the intransitive verb *mulnaj* 'to work', which is not expected in the adult grammar. Xhim produced only two cases of nominalized intransitive verbs, where the switch from absolutive to ergative is clear, but without a conditioning context as shown in (13)b in contrast to (13)a.

(13) a. lan **hamulnajil** tom. Xhim (2;9) Absolutive > ergative
= /lan ha-mulnaj-!il dom
PROG E2s-work-ABS Dominga
'Dominga you are working.'

b. **yaytok**. Xhim (2;8) Without context
= y/ay-toq
E3s-go-DIR
'S/he/it is getting down.'

5.1.2.1.4. Dependent Intransitive Verb Forms

In non-final position (Table 5.12), Xhim produced 33% of dependent intransitive verbs as bare roots and 67% as bare stems. In (14)a and (14)b, he used an intransitive bare root, which is expected in non-final position, although in (14)a he did not produce the matrix clause that contains the intransitive verb *el* 'to exit'.

(14) a. **kot** ka la. Xhim (2;3) Bare root
= *x-ø*/el /k'ot ka la
COM-A3s-exit fall here
'S/he/it fell here.'

b. chok **ol** heb'. Xhim (2;4) Bare root
= ch-ø/'ok /ul heb'
INC-A3s-enter DIR A1p
'They are coming in.'

Table 5.12. Xhim's Dependent Intransitive Verb Forms: Tokens in Non-final Position

Age	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
Stem	1	2	0	0	6	9	6	24 (33%)
Root	0	17	0	2	2	33	11	65 (67%)

In final position (5.13), Xhim produced 27% of intransitive verbs as bare roots and 73% as bare stems. When Xhim produced bare stems he did not produce the main intransitive verb as shown in (15)a. In contrast, when he produced bare roots he produced the matrix verb as shown in (15)b. Parallel to the production of intransitive verbs as bare stems and bare roots, Xhim also produced only bare stems conditioned by the matrix verb. The dependent intransitive verb takes the dependent suffix *-oq* as shown in (15)c.

(15) a. **eloX.** Xhim (2;5) Bare stem
= *ch-ø*/ek’ /el-oq
INC-A3s-pass DIR-DEP
‘S/he/it exits.’

b. chel**ol**. Xhim (2;8) Bare root
= ch-ø/’el /ul-*oq
INC-A3s-exit DIR-DEP
‘S/he/it comes out.’

c. lak **ajoq**. Xhim (2;8) Bare stem
= /lak /aj-oq
hold DIR-DEP
‘Hold it up.’

Table 5.13. Xhim’s Dependent Intransitive Verb Forms: Tokens in Final Position

Age	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
Stem	0	0	6	0	3	14	4	27 (73%)
Root	0	0	0	0	0	0	3	3 (27%)

5.1.2.1.5. Summary

Xhim produced indicative and dependent clauses in his first sessions, while nominalized and imperative clauses appeared later and with a lower frequency. As in Xhuw’s case, Xhim produced intransitive verbs as bare stems and bare roots in non-final (Table 5.14) and final (5.15) positions in imperative, indicative, and dependent clauses. He produced fewer intransitive verbs in nominalized clauses. In addition to the bare stems, he also used intransitive verbs as entire forms and with aspect omission in both positions. As shown in Tables 5.14 and 5.15 Xhim showed three basic verb forms: i) imperative, ii) indicative, and iii) dependent.

Table 5.14. Intransitive Verb Forms: Non-final Position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
Entire	0%	13%	0%	0%
-aspect	0%	11%	0%	0%
-absolutive	0%	1%	0%	0%
bare stem	96%	19%	0%	33%
bare root	4%	56%	0%	67%

Table 5.15. Intransitive Verb Forms: Final Position

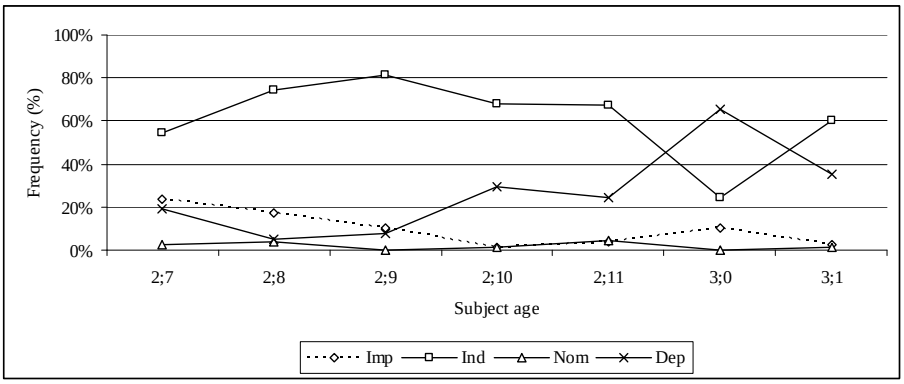
	Imperative	Indicative	Nominalized	Dependent
entire	0%	6%	0%	0%
-aspect	0%	6%	0%	0%
-absolutive	0%	1%	0%	0%
bare stem	100%	43%	0%	73%
bare root	0%	44%	0%	27%

5.1.3. Tum's Clause Types and Verb Forms

5.1.3.1. Tum's Clause Types

In non-final position Tum produced intransitive verbs in mostly indicative clauses followed by dependent and imperative clauses (Figure 5.9). She produced few cases of nominalized clauses.

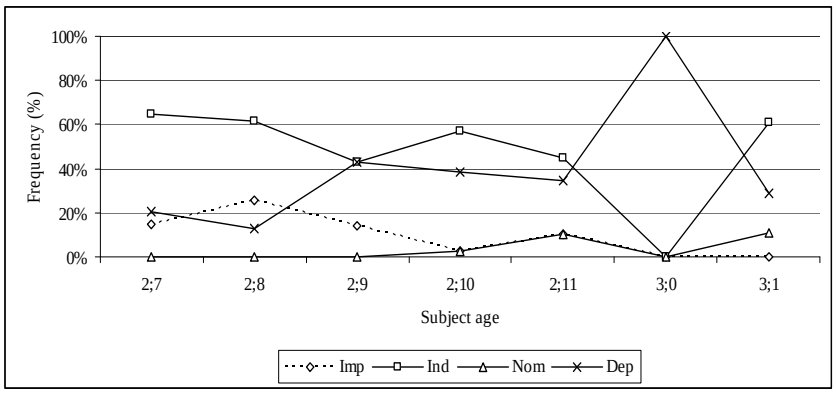
Figure 5.9. Tum's Intransitive Clauses: Tokens in Non-final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
Imp	10	14	4	1	5	3	6	43 (7%)
Ind	23	60	31	44	94	7	130	389 (64%)
Nom	1	3	0	1	6	0	3	14 (2%)
Dep	8	4	3	19	34	19	76	163 (27%)

Tum followed Xhim's production pattern of intransitive clauses in final position (Figure 5.10). Most of her intransitive clauses in final position appeared in indicative clauses and later with dependent and imperative clauses. She produced few cases of nominalized clauses.

Figure 5.10. Tum's Intransitive Clauses: Tokens in Final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
Imp	5	12	1	1	3	0	0	22 (12%)
Ind	22	29	3	25	13	0	17	109 (57%)
Nom	0	0	0	1	3	0	3	7 (4%)
Dep	7	6	3	17	10	2	8	53 (28%)

5.1.3.2. Tum's Verb Forms

5.1.3.2.1. Imperative Intransitive Verb Forms

In non-final position (Table 5.16), Tum produced 83% of her imperative verbs as bare stems (16)a and 17% as bare roots (16)b. In some cases she only produced part of the intransitive verb and did not produce the imperative suffix *-an* (16)c.

(16) a. **wayan** hinchi'... Tum (2;8) Bare stem
= /way-an hin/chi...
sleep-IMP E1s-say.
'Sleep, I said.'

b. **ayan** chot nena. Tum (3;0) Bare stem
= /ay-an /chot nena
go-IMP sit baby
'Sit down, baby.

c. **achot** nena. Tum (3;0) Bare root
= /ay-*an /chot nena
go-IMP sit baby
'Sit down, baby.'

Table 5.16. Tum's Imperative Intransitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
Stem	8	9	3	1	5	3	5	34 (83%)
Root	2	4	0	0	0	0	1	7 (17%)

In final position (Table 5.17), Tum produced 100% of imperative intransitive verbs as bare stems (17).

(17) a. **'ok'an**. Tum (2;8) Bare stem
= /oq'-an
cry-IMP
'Cry!'

b. tan **toneX**. Tum (2;7) Bare stem
= tay /ton-eq
now go.IMP-PL
'Now let's go.'

Table 5.17. Tum's Imperative Intransitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
Stem	5	12	1	1	3	0	0	22 (100%)
Root	0	0	0	0	0	0	0	0 (0%)

5.1.3.2.2. Indicative Intransitive Verb Forms

In non-final position (Figure 5.11), Tum produced many intransitive verbs as entire verb forms (18)a (22% (83/384)) and sometimes omitted aspect marking (18)b (20% (76/384)), but still produced 37% (143/384) as verb roots (18)c and 21% (82/384) as bare stems (18)d.

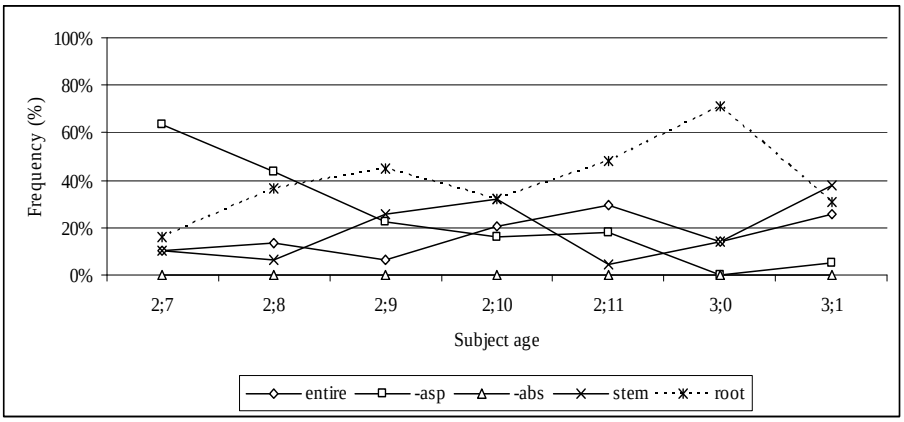
(18) Non-final verb forms
a. **ch'ok** oloX. Tum (2;7) Entire complex
= ch-ø/'ok /ol-oq
INC-A3s-enter DIR-DEP
'She is coming (from outside to inside).'

b. **hinawj** way. Tum (2;7) Omission of aspect
= *ch-in /aw-j-*i b'ay
INC-A1s scream-DER-IV pre
'I call him/her.'

c. **oq** ka la. Tum (2;7) Bare root
= *ch-ø/oq' kaq la
INC-A3s-cry like that
'S/he/it cries like that.'

d. **k'aji** chi ka la. Tum (2;7) Bare stem
= *ch-ø/q'aj-i /xhi kaq la.
INC-A3s-break-IV said like that
'It breaks she said like that.'

Figure 5.11. Tum's Indicative Intransitive Verb Forms: Tokens in Non-final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (384)
entire	2	8	2	9	28	1	33	83 (22%)
-asp	12	26	7	7	17	0	7	76 (20%)
-abs	0	0	0	0	0	0	0	0 (0%)
stem	2	4	8	14	4	1	49	82 (21%)
root	3	22	14	14	45	5	40	143 (37%)

Tum produced 35% (40/113) of intransitive verbs as bare stems (19)a and 6% (7/113) as bare roots (19)b in final position (Figure 5.12). She showed more contexts of omission of aspect (35% (39/113)) as in (19)c.

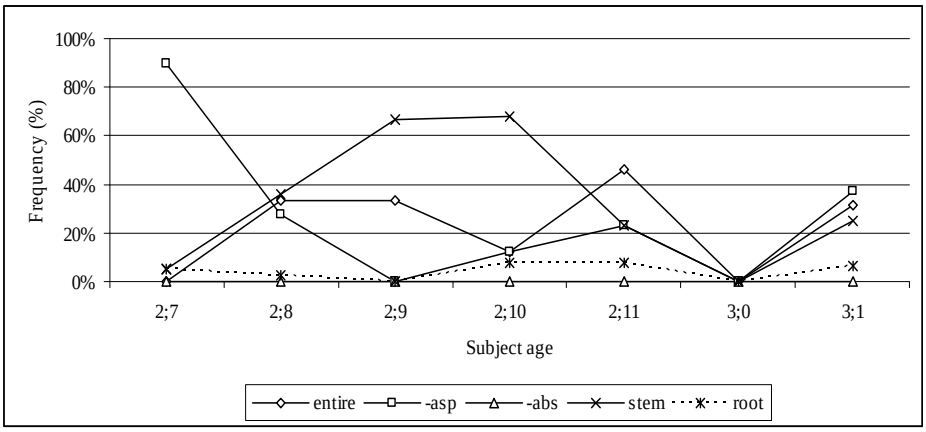
(19) Final verb forms

a. **ok'i.** Tum (2;7) Bare stem
= /*ch-ø/oq'-i.
INC-A3s-cry-IV
'S/he/it cries.'

b. ja' **tit**. Tum (2;7) Bare root
= ja' *ch-ø/tit-a
yes INC-A3s-come-SUF
'Yes, s/he/it comes.'

c. **hinchiwi**. Tum (2;7) Omission of aspect
= *ch-in /xiw-i
INC-A1s scare-IV
'I get scared.'

Figure 5.12. Tum's Indicative Intransitive Verb Forms: Tokens in Final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (113)
entire	0	12	1	3	6	0	5	27 (24%)
-asp	17	10	0	3	3	0	6	39 (35%)
-abs	0	0	0	0	0	0	0	0 (0%)
stem	1	13	2	17	3	0	4	40 (35%)
root	1	1	0	2	1	0	1	7 (6%)

5.1.3.2.3. Nominalized Intransitive Verb Forms

At 2;7 Tum produced nominalized intransitive verbs where she clearly showed the use of ergative prefixes cross-referencing intransitive verbs in non-final position (Table 5.18). She produced more cases of nominalized intransitive verbs without a preceding conditioning context

as shown in (20)a. In (20)b, she produced correctly a nominalized intransitive verb after the word *ax* ‘then’.

(20) a. **yo’** icha. Tum (2;8) No conditioning context
= y/oq’ icham
E3s-cry old man
‘An old man cried.’

b. axh **yok** chaj b’ay heb’ telexh tu. Tum (3;1) Nominalized
= ax y/ok txaj b’ay heb’ telexh tu.
then E3s-enter pray PRE they Teresa DEM
‘Then, a prayer is going to happen at Teresa’s there.’

Table 5.18. Tum’s Nominalized Intransitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
-aspect	1	2	0	1	6	0	3	13 (100%)
Stem	0	0	0	0	0	0	0	0 (0%)
Root	0	0	0	0	0	0	0	0 (0%)

In final position (Table 5.19.) Tum produced few tokens of nominalized intransitive verbs without aspect (50%) and bare stems (21)a (50%). I consider the example in (21)a to be a bare stem due to the fact that the ergative morpheme in the Q’anjob’al of Santa Eulalia is becoming a zero morpheme similar to the absolutive morpheme for third person singular. While Tum produced bare stems at this age, she showed a switch from absolutive morphemes to ergative morphemes to mark nominalized intransitive verbs (21)b. The nominalized intransitive verb in (21)b is conditioned by *lanan* ‘in progress.’

(21) a. wa’ **kani.** Tum (2;11) Bare stem
= watx’ ø/kan-i.
good E3s-stay-NOM
‘It is good form him/her/it to stay.’

b. lanan **hink'ajab'i.** Tum (2;11) Absolutive > ergative
= lanan hin/q'anjab'-i
PROG E1s-talk-NOM
'I am talking.'

Table 5.19. Tum's Nominalized Intransitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
-aspect	0	0	0	0	2	0	1	3 (50%)
Stem	0	0	0	1	1	0	1	3 (50%)
Root	0	0	0	0	0	0	0	0 (0%)

5.1.3.2.4. Dependent Intransitive Verb Forms

Tum produced 36% of intransitive verbs as bare stems and 64% as bare roots in non-final position (Table 5.20). The intransitive verb *ok* 'enter' in (22)a appeared as a complement of the imperative transitive verb *al* 'to say'. In contrast, in (22)b, Tum produced an intransitive verb as a bare stem, given that she overextended the dependent suffix *-oq*.

(22) a. **alok** ka la. Tum (2;7) Bare root
= /al-/ok ka la
say-DIR here
'Say it here.'

b. hik'exh **iloX** yib'an k'axh. Tum (2;7) Bare stem
= *ch-ø-in/k'ex /el-!oq y-ib'an k'ax
INC-A3s-E1s-change DIR-DEP E3s-RN stick
'I changed it on the stick.'

Table 5.20. Tum's Dependent Intransitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
Stem	2	0	3	10	0	7	33	55 (36%)
Root	3	2	0	9	29	12	42	97 (64%)

As Table 5.21 shows, from the age of 2;7 Tum produced 98% of intransitive verbs as bare stems and 2% as bare roots in final position as illustrated in (23)a and (23)b. In (23)c she inserted

an extra morpheme between the intransitive verb *aj* ‘go_up’ and the dependent suffix *-oq*. Tum produced only one token of a bare root in final position (23)d.

(23) a. ch’ok **oloX.** Tum (2;7) Bare stem
= ch-ø/’ok /ol-oq
INC-A3s-enter DIR-DEP
‘S/he/it is entering.’

b. ’inb’ixh ilok. Tum (2;8) Bare stem
= ch-ø-in/b’ix /el-oq
INC-A3s-E1s-pick DIR-DEP
‘I pick it.’

c. no’ no’ linan a’onoq. Tum (2;8) Bare stem
= no’ no’ /linan /aj-!on-oq
CL animal standing go_up-AP-DEP
‘The animal that it is standing.’

d. ’el pum. Tum (2;11) Bare root
= *ch-ø/el /pumnaj-*oq
INC-A3s-exit NVP-DEP
‘S/he/it falls.’

Table 5.21. Tum’s Dependent Intransitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
stem	5	5	3	17	8	2	7	47 (98%)
root	0	0	0	0	1	0	0	1 (2%)

5.1.3.2.5. Summary

Tum produced indicative and dependent clauses in her first sessions, while nominalized and imperative clauses appeared later and with a lower frequency. In non-final position (Table 5.22) Tum produced intransitive verbs as bare stems and bare root in imperative, indicative, and dependent clauses. In final position (Table 5.23) she produced bare stems and bare roots only in indicative and dependent clauses. In contrast to Xhuw and Xhim, Tum has acquired the four different verb forms as shown in Tables 5.22 and 5.23.

Table 5.22. Tum's Verb Forms: Non-final Position

	Imperative	Indicative	Nominalized	Dependent
entire	0%	22%	0%	0%
-aspect	0%	20%	100%	0%
-absolutive	0%	0%	0%	0%
bare stem	83%	21%	0%	36%
bare root	17%	37%	0%	64%

Table 5.23. Tum's Verb Forms: Final Position

	Imperative	Indicative	Nominalized	Dependent
entire	0%	24%	0%	0%
-aspect	0%	35%	50%	0%
-absolutive	0%	0%	0%	0%
bare stem	100%	35%	50%	98%
bare root	0%	6%	0%	2%

5.2. Frequency Analysis

In this section I analyze the acquisition of the inflectional morphemes of aspect, absolutive, and status suffixes by applying the Frequency Analysis.

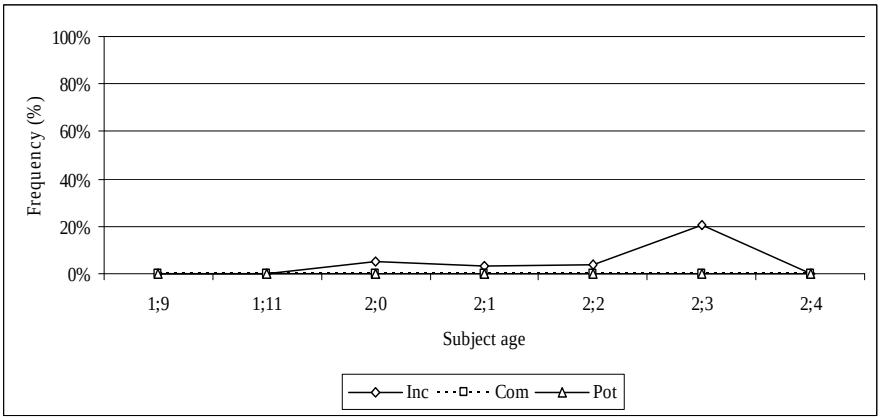
5.2.1. Aspect

5.2.1.1. Xhuw's Aspect

Xhuw did not produce both completive and potential aspects (Figure 5.13). The incompletive aspect (24) was only used sporadically.

(24) **chawi.** Xhuw (2;3) complete form
= ch-ø/laj-w-i
INC-A3s-finish-AP-IV
'It gets finished.'

Figure 5.13. Xhuw's Aspect Markers on Intransitive Verbs



Asp	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Average %
Inc	0/3	0/31	3/59	1/32	1/25	15/72	0/17	20/239 (8%)
Com	0/0	0/17	0/27	0/26	0/12	0/46	0/33	0/161 (0%)
Pot	0/0	0/1	0/2	0/6	0/2	0/3	0/7	0/20 (0%)

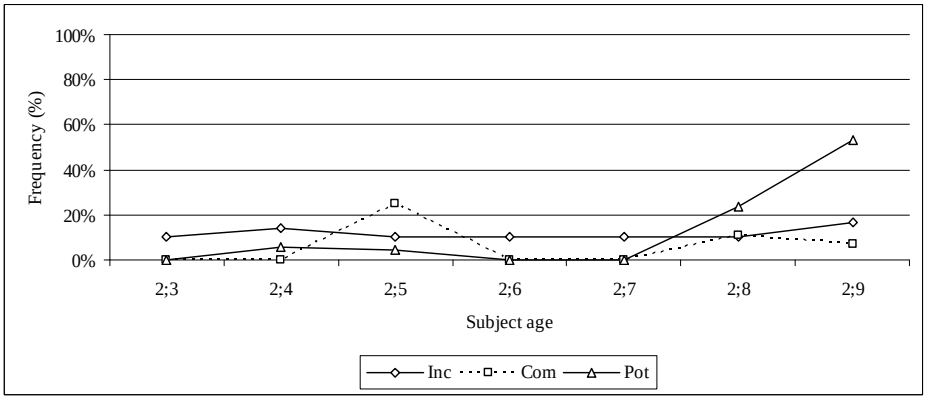
5.2.1.2. Xhim's Aspect

The data in Figure 5.14 show that Xhim began producing the aspect prefixes around 2;8. Before this age he produced the incompletive prefix on 10% of his intransitive verbs

(25). The frequency analysis suggests that Xhim has not acquired aspect prefixes.

(25) **chpil** nani. Xhim (2;5) entire complex
= ch-ø-/b'il nani
INC-A3s-move now
'She/he/it moves now.'

Figure 5.14. Xhim's Aspect Markers on Intransitive Verbs



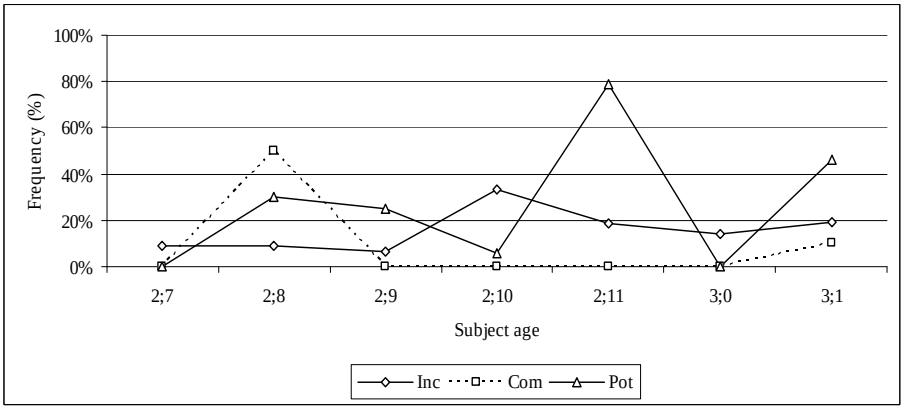
	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
Inc	1/10	13/93	5/49	1/10	2/19	8/76	11/66	41/323 (12%)
Com	0/3	0/10	2/8	0/1	0/6	1/9	2/29	5/66 (8%)
Pot	0/12	2/35	1/22	0/1	0/3	5/21	8/15	16/109 (14%)

5.2.1.3. Tum's Aspect

Tum's acquisition followed the same pattern seen in Xhim's data. As Figure 5.15 shows, Tum's use of the potential prefix was greater than her use of the incompletive. Her use of the completive prefix remained marginal. Tum produced more verbs in incompletive contexts, but produced the potential prefix more frequently (26). The frequency analysis shows that Tum has not acquired the aspect prefixes. She produced 80% of the potential aspect at 2;11.

(26) **kin ajteX** pelo. Tum (2:11) Entire complex
= q-in /aj-teq pedro.
POT-A1S go.up-DIR Pedro
'I will get out, Pedro.'

Figure 5.15. Tum's Aspect Markers on Intransitive Verbs



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
Inc	3/33	6/67	2/30	11/33	8/43	1/7	7/36	38/249 (15%)
Com	0/3	1/2	0/0	0/19	0/31	0/0	6/57	7/112 (6%)
Pot	0/8	6/20	1/4	1/17	26/33	0/0	25/54	59/137 (43%)

5.2.2. Absolutive

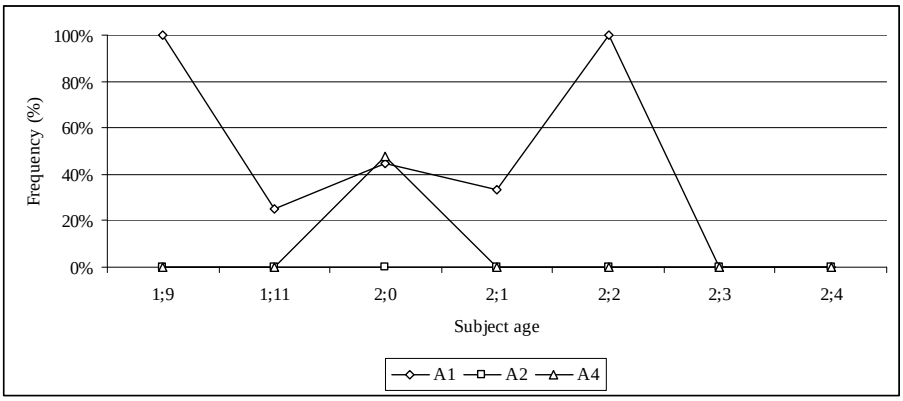
5.2.2.1. Xhuw's Absolutive

Absolutive prefixes appear only on intransitive verbs in indicative contexts in the adult grammar. The third person singular absolutive is a zero morpheme. Figure 5.16 shows that Xhuw produced contexts for the absolutive morpheme for third person singular most frequently starting from the age of 1;9. She produced some cases of the absolutive morpheme *-in* for first person (27)a, but with a very low frequency compared to the third person singular. She produced three contexts of the absolutive morpheme *-ach* for second person singular between the ages of 2;1 and 2;2, in which she did not produce the prefix overtly. At 2;0 she started producing the absolutive morpheme *-on* for first person plural (27)b, but only with the intransitive verb *way* 'to sleep.' At 1;9 and 2;2 she produced 100% of the first person singular absolutive.

(27) a. **ntohih**. Xhuw (1;11) 1sg absolutive
= *ch-in /toj-i
INC-A1s go-IV
'I go'.

b. **hon /way.** Xhuw (2;0) 1pl absolutive
= *ch-on /way-*i
INC-A1p sleep-IV
'We sleep.'

Figure 5.16. Xhuw's Absolutive Marking on Intransitive Verbs



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Average %
A1	1/1	1/4	4/9	2/6	1/1	0/1	0/13	9/25 (36%)
A2	0/0	0/0	0/0	0/1	0/2	0/0	0/0	0/3 (0%)
A3	0/2	0/44	0/67	0/58	0/35	0/118	0/52	376
A4	0/0	0/0	11/23	0/1	0/2	0/1	0/3	11/30 (36%)

In nominalized clauses (Table 5.24), between 2;0 and 2;1, Xhuw used the first and second person singular ergative morphemes, and between the age 2;2 and 2;3 she used only the ergative morpheme *ko-/j-*. Xhuw produced intransitive verbs mostly with bare stem forms and in third person singular contexts, which makes it hard to evaluate the acquisition of ergative agreement for nominalized intransitive verbs. The frequency analysis suggests that Xhuw had not acquired the absolutive morphemes in indicative contexts but she had acquired the ergative morphemes in nominalized contexts.

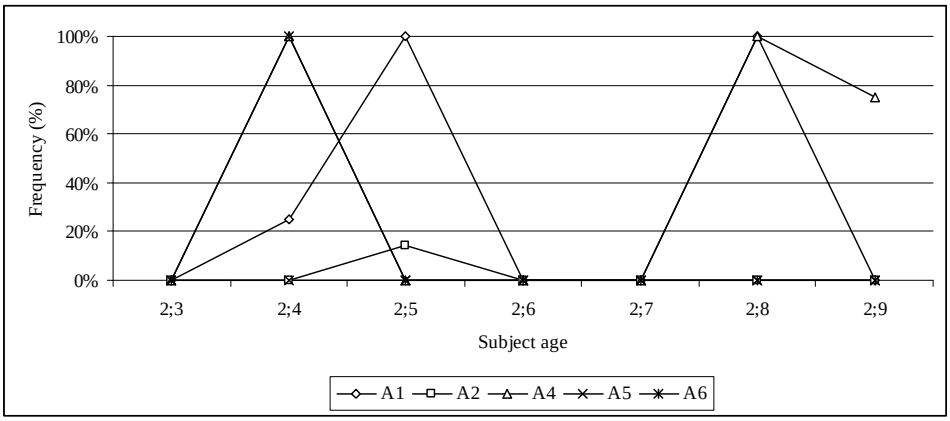
Table 5.24. Xhuw's Ergative Marking on Intransitive Verbs

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Average %
E1	0/0	0/0	10/10	0/0	0/0	0/0	0/0	10/10 (100%)
E2	0/0	0/0	6/6	2/2	0/0	0/0	0/0	8/8 (100%)
E3	0/0	0/0	0/0	2/2	0/0	0/0	0/0	2/2 (100%)
E4	0/0	0/0	2/2	0/0	0/0	4/4	1/1	7/7 (100%)

5.2.2.2. Xhim's Absolutive

Xhim also produced a higher frequency of absolutive contexts for third person singular as shown in Figure 5.17. At 2;4 Xhim started producing some overt forms of the absolutive morpheme *-in* for first person singular and only two overt forms of the absolutive morpheme *-ach* for second person singular at 2;9. Xhim also produced some overt forms of the absolutive morpheme *-on* for first person plural at 2;7, and some overt forms of the third person plural *-ø … heb'* at 2;4, but not later.

Figure 5.17. Xhim's Absolutive Marking on Intransitive Verbs



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (500)
A1	0/1	5/10	8/10	1/1	1/1	19/21	9/15	43/59 (73%)
A2	0/2	0/1	1/7	0/0	0/1	0/0	2/5	3/16 (19%)
A3	0/13	0/15	0/61	0/11	0/24	0/81	0/74	379
A4	0/9	2/2	1/1	0/0	2/2	4/4	8/9	17/27 (63%)
A5	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
A6	0/0	5/11	0/1	0/0	0/0	0/0	0/7	5/19 (26%)

Xhim produced fewer contexts of nominalization as shown in Table 5.25. The frequency analysis shows that he has not acquired the absolutive morphemes in indicative contexts, but used the ergative morphemes in nominalized contexts.

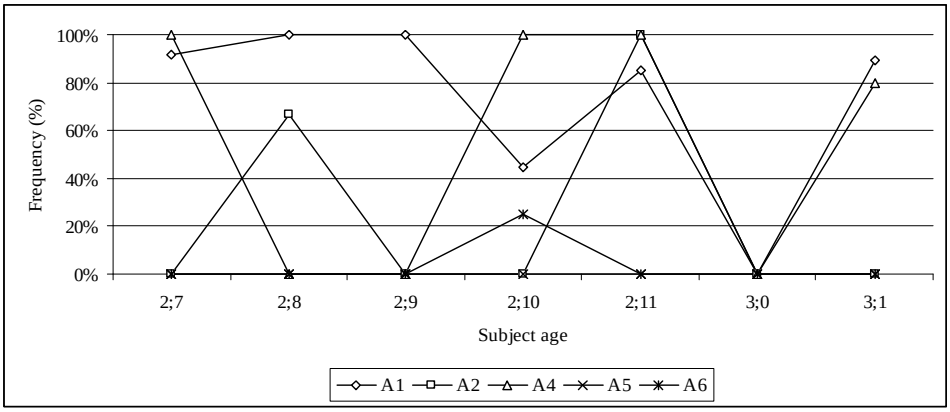
Table 5.25. Xhim's Ergative Marking on Intransitive Verbs

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
E1	0/0	0/0	0/0	0/0	0/0	1/1	0/0	1/1 (100%)
E2	0/0	0/0	0/0	0/0	0/0	1/1	0/0	1/1 (100%)
E3	0/0	0/0	0/0	0/0	0/0	4/4	1/1	5/5 (100%)

5.2.2.3. Tum's Absolutive

Figure 5.18 shows that Tum also produced a high frequency of the third person singular contexts. Figure 5.18 also shows that Tum produced few contexts of the second person singular absolutive only at 2;8 and 2;11. The absolutive morphemes for plural marking appeared late.

Figure 5.18. Tum's Absolutive Marking on Intransitive Verbs



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average
A1	22/24	27/27	5/5	4/9	35/41	0/0	34/38	127/144 (88%)
A2	0/0	2/3	0/2	0/0	4/4	0/0	0/0	6/9 (67%)
A3	0/18	0/59	0/27	0/55	0/57	0/7	0/90	313
A4	1/1	0/0	0/0	1/1	4/4	0/0	12/15	18/21 (86%)
A5	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
A6	0/0	0/0	0/0	1/4	0/1	0/0	0/4	1/9 (11%)

According to the frequency analysis, Tum produced the first person singular absolutive by 2;7 and the first person plural absolutive by 2;10. She also acquired the second person singular absolutive around 2;8. She produced the ergative prefixes more consistently in nominalized context (Table 5.26), but had few tokens.

Table 5.26. Tum's Ergative Prefixes on Intransitive Verbs in Nominalized Context

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
E1	0/1	2/2	0/0	0/2	3/3	0/0	2/2	7/8 (88%)
E2	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/2 (00%)
E3	0/0	0/1	0/0	1/1	4/5	0/0	1/2	6/9 (67%)
E4	0/0	0/0	0/0	0/0	0/0	0/0	2/2	2/2 (100%)

In summary, the Q'anjob'al children produced absolutive markers sporadically before the age of 2;7. At 2;8 Xhim and Tum began producing some of the absolutive markers consistently in obligatory contexts. In contrast, all three children produced the ergative prefixes consistently in nominalized clauses. This suggests that these children acquired first ergative morphemes than absolutive morphemes.

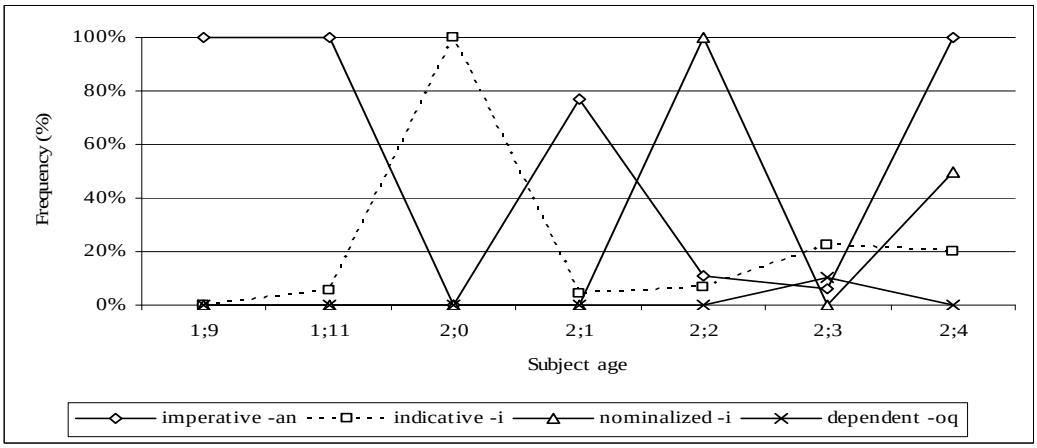
5.2.3. Status Suffixes

For the Frequency Analysis of the status suffixes, I grouped the intransitive verbs in non-final and final positions. This type of analysis shows when the three children omitted the status suffixes in final position and when they overextended it in non-final position.

5.2.3.1. Xhuw's Status Suffixes

Xhuw's status suffixes that appeared in non-final position are shown in Figure 5.19. The imperative suffix *-an* remains in non-final and final positions in contrast to the other suffixes (e.g. indicative). In non-final position, Xhuw produced 35% of the suffix *-an*, 52% of the indicative status suffix *-i*, 3% of the nominalizing suffix *-i*, and 10% of the dependent suffix *-oq*.

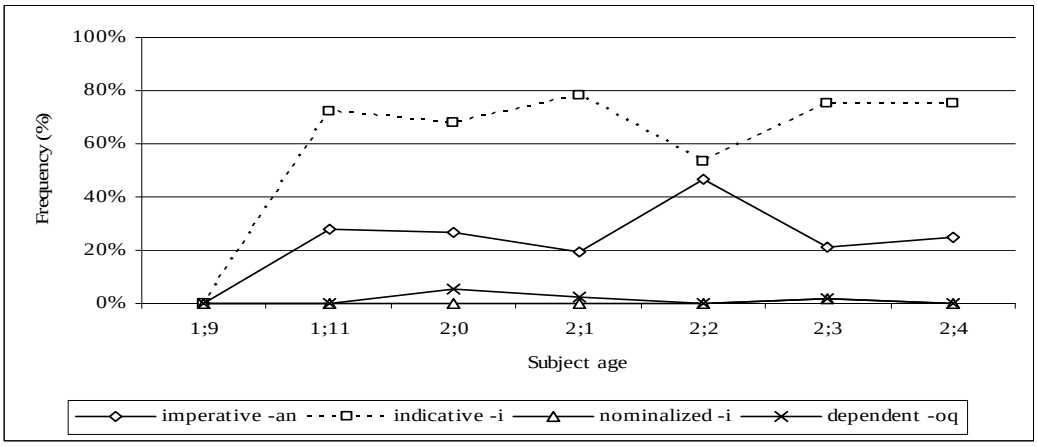
Figure 5.19. Xhuw's Status Suffixes in Non-final Position



Non-final	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
imperative *-an*	1/1	1/1	0/0	10/13	2/18	4/63	4/4	22 (35%)
indicative *-i*	0/0	1/19	13/13	1/25	1/15	10/44	7/35	33 (52%)
nominalized *-i*	0/0	0/0	0/0	0/0	1/1	0/0	1/2	2 (3%)
dependent *-oq*	0/0	0/0	0/0	0/0	0/0	6/58	0/0	6 (10%

Xhuw's status suffixes that appeared in final position are shown in Figure 5.20. As this figure illustrates, Xhuw produced 27% of the imperative suffix *-an*, 70% of the indicative status suffix *-i*, 0.5% of the nominalizing suffix *-i*, and 2% of the dependent suffix *-oq*. The frequency analysis suggests that Xhuw acquired the indicative status suffix by the age of 1;11, but had not acquired the other status suffixes by the age of 2;4

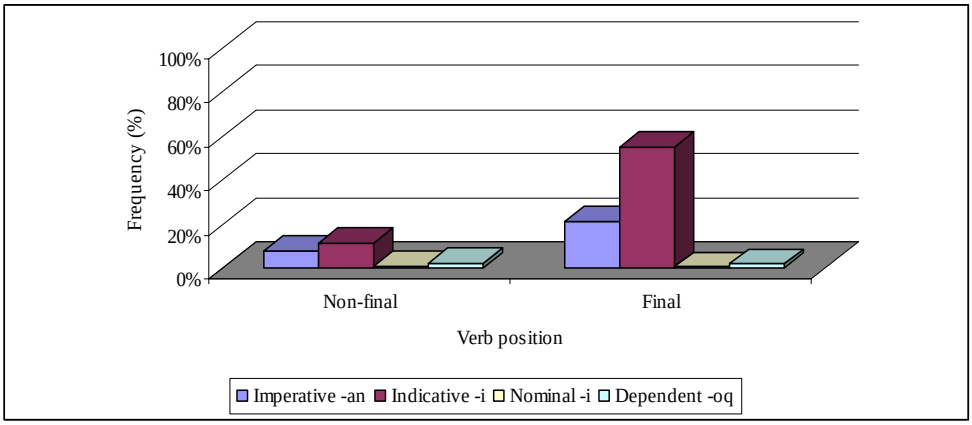
Figure 5.20. Xhuw's Status Suffixes in Final Position



Final	1;9	1;11	2;0	2;1	2;2	2;3	3;4	Total (226)
imperative *-an*	0/3	8/9	15/21	8/16	15/23	12/21	3/5	61 (27%)
indicative *-i*	0/1	21/26	38/53	32/35	17/21	42/58	9/19	159 (70%)
nominalized *-i*	0/0	0/0	0/0	0/2	0/1	1/2	0/0	1 (0.5%)
dependent *-oq*	0/2	0/1	3/9	1/1	0/0	1/2	0/0	5 (2%)

A comparison of the distribution of the suffixes produced by Xhuw in non-final and final position is shown in Figure 5.21. The distribution is given in percentages. Overall, she produced more indicative suffixes (66%) than imperative suffixes (29%), but she produced more of these two types of suffixes than the nominalized (1%) and dependent (4%) suffixes. The occurrence of the status suffixes in final position is much higher than their occurrence in non-final position. The section on errors deals with the asymmetry of the percentage of use of these suffixes in non-final and final position.

Figure 5.21. Xhuw's Distribution of Status Suffixes

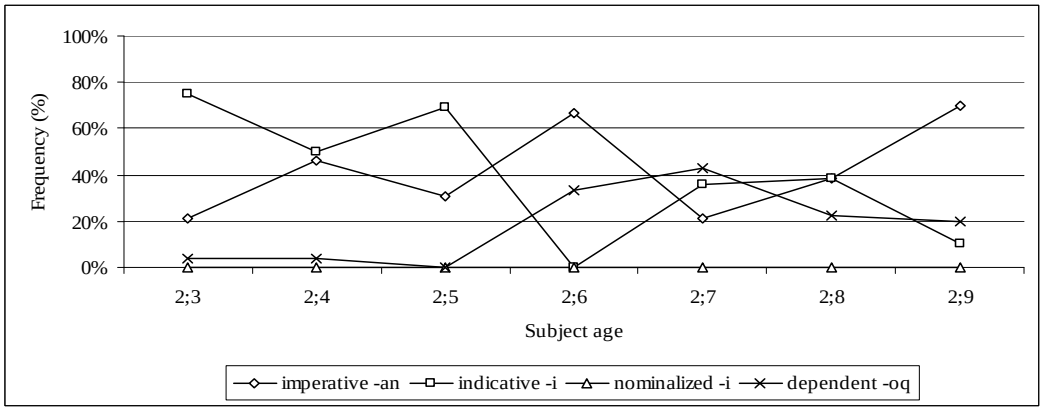


Position	Imperative *-an*	Indicative *–i*	Nominal *-i*	Dependent *-oq*
Non-final	8%	11%	1%	2%
Final	21%	55%	0%	2%
Total (289)	29%	66%	1$	4%

5.2.3.2. Xhim's Status Suffixes

Xhim's status suffixes that appeared in non-final position are shown in Figure 5.22. He produced 41% of the imperative suffix *-an*, 44% of the indicative suffix *-i*, and 15% of the dependent suffix *-oq*. Xhim did not produce the nominalizing suffix *-i*.

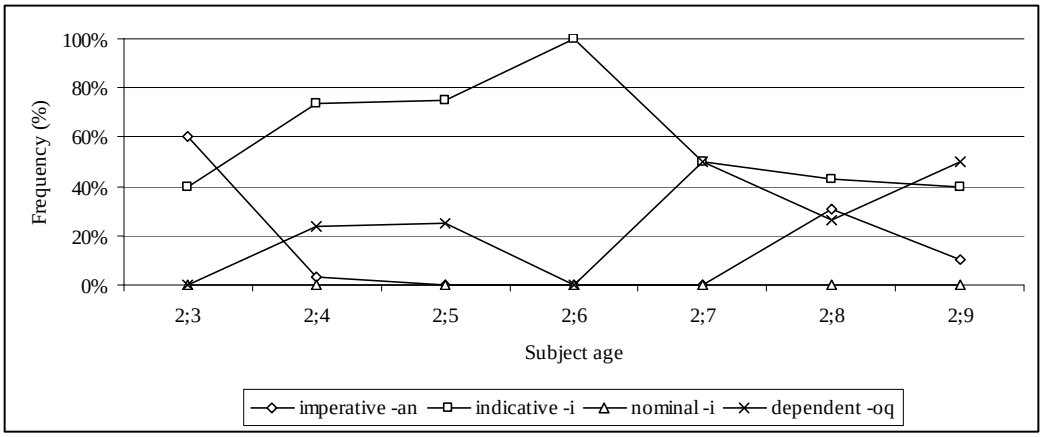
Figure 5.22. Xhim's Status Suffixes in Non-final Position



Non-final	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (147)
imperative *-an*	6/6	13/13	4/4	2/2	3/3	12/13	21/23	61 (41%)
indicative *-i*	21/21	14/56	9/43	0/3	5/18	12/47	3/62	64 (44%)
nominalized *-i*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
dependent *-oq*	1/1	1/18	0/0	1/2	6/8	7/40	6/16	22 (15%)

Xhim's status suffixes in final position are shown in Figure 5.23. In this position, he produced 13% of the imperative suffix *-an*, 61% of the indicative suffix *-i*, and 26% of the dependent suffix *-oq*. He produced the nominalizing suffix *-i*. The frequency analysis shows that Xhim acquired the indicative status suffix *-i* by the age of 2;4, but had not acquired the other status suffixes by the age of 2;9.

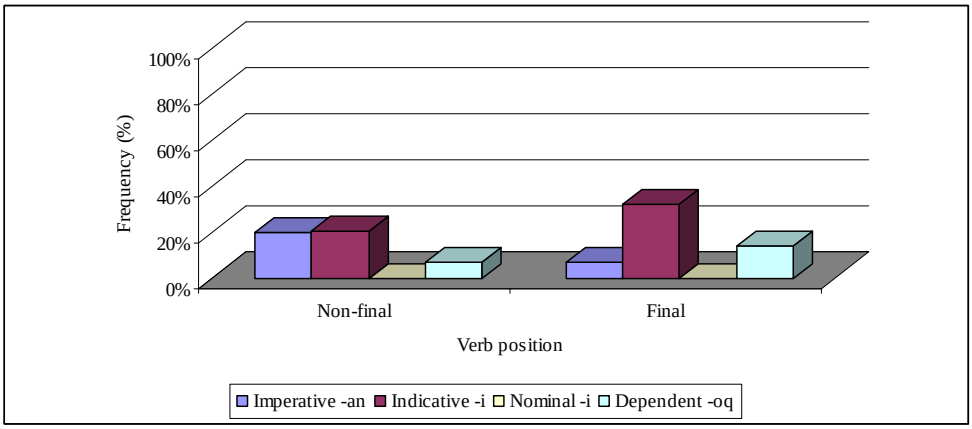
Figure 5.23. Xhim's Status Suffixes in Final Position



Final	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (163)
imperative *-an*	3/3	2/2	0/0	0/0	0/0	15/15	1/1	21 (13%)
indicative *-i*	2/2	50/56	18/18	1/5	3/6	21/26	4/7	99 (61%)
nominal *-i*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
dependent *-oq*	0/0	16/17	6/6	0/0	3/3	13/14	5/5	43 (26%)

A comparison of the distribution of the suffixes produced by Xhim in non-final and final positions is shown in Figure 5.24. The distribution is given in percentages. Xhim produced more indicative suffixes than imperative suffixes. He produced fewer dependent suffixes and no nominalizing suffixes. The use of status suffixes in non-final position is discussed in section 4.

Figure 5.24. Xhim's Distribution of Suffixes in Non-final and Final Positions

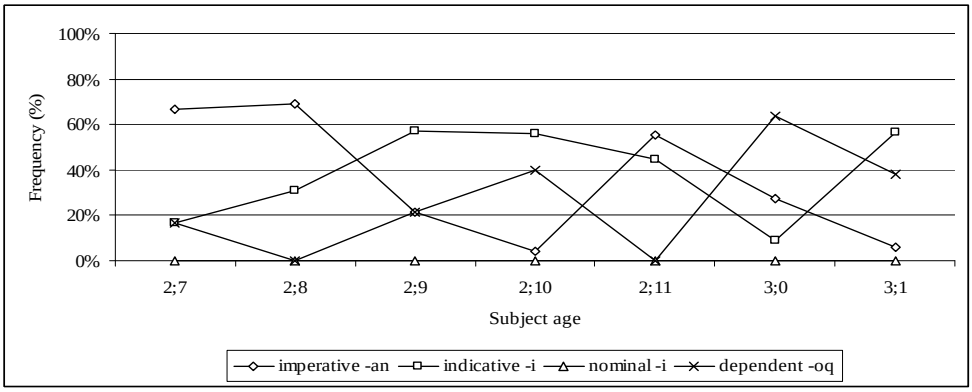


	Imperative *-an*	Indicative *-i*	Nominal *-i*	Dependent *-oq*
Non-final	20%	21%	0%	7%
Final	7%	32%	0%	14%
Total (310)	26%	53%	0%	21%

5.2.3.3. Tum's Status Suffixes

Figure 5.25 shows Tum's production of status suffixes in non-final position. In this position she produced 20% of the imperative suffix *-an*, 48% of the indicative suffix *-i*, and 32% of the dependent suffix *-oq* and 0% of the nominalizing suffix *-i*.

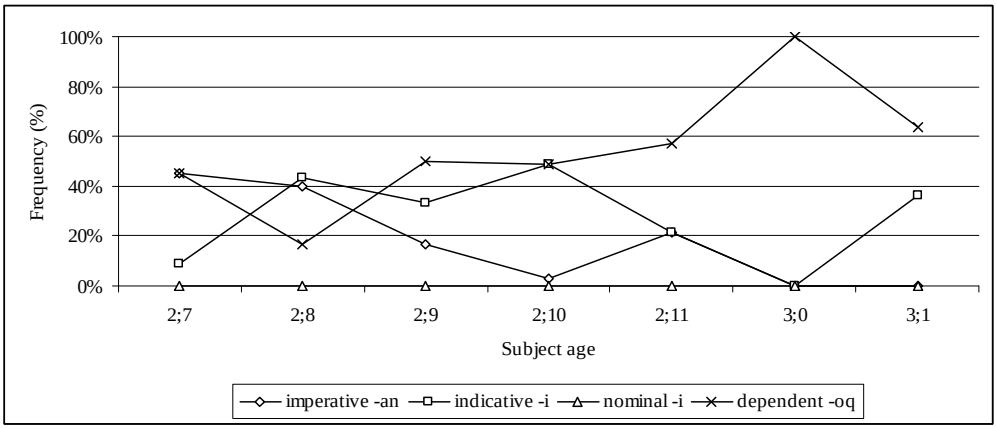
Figure 5.25. Tum's Status Suffixes in Non-final Position



Non-final	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (171)
imperative	8/10	9/13	3/3	1/1	5/5	3/3	5/6	34 (20%)
indicative	2/5	4/26	8/22	14/28	4/49	1/6	49/89	82 (48%)
nominal	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
dependent	2/5	0/2	3/3	10/19	0/29	7/19	33/75	55 (32%)

In final position (Figure 2.26), Tum produced 20% of the imperative suffix *-an*, 37% of the indicative suffix *-i*, and 43% of the dependent suffix *-oq*. Notice that in non-final position, Tum did not produce the dependent suffix in final position. The frequency analysis shows that Tum has not acquired any of the status suffixes. She produced the dependent suffix *-oq* more consistently than the other status suffixes.

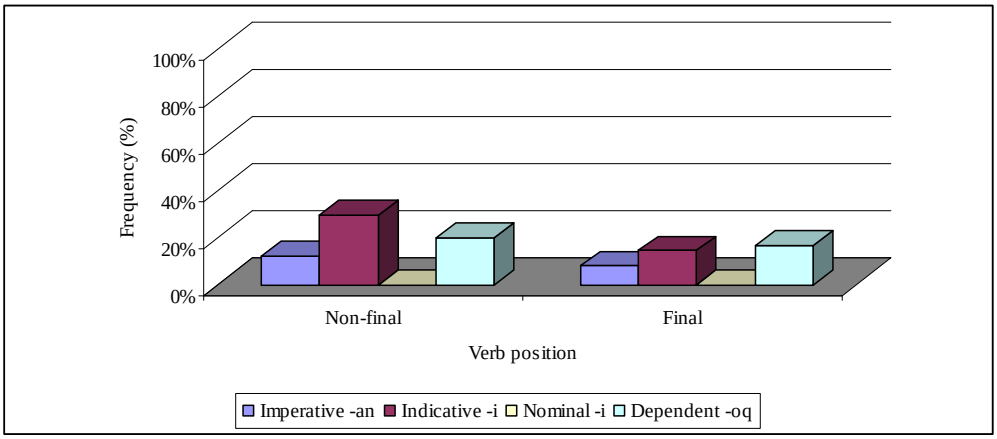
Figure 5.26. Tum's Status Suffixes in Final Position



Final	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (109)
imperative *-an*	5/5	12/12	1/1	1/1	3/3	0/0	0/0	22 (20%)
indicative *-i*	1/2	13/14	2/2	17/19	3/4	0/0	4/5	40 (37%)
nominal *-i*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
dependent *-oq*	5/5	5/5	3/3	17/17	8/9	2/2	7/7	47 (43%)

A comparison of the distribution of the suffixes produced by Tum in non-final and final positions is shown in Figure 5.27. The distribution is given in percentages. In contrast to Xhuw and Xhim, Tum produced more indicative suffixes than dependent suffixes, but she produced fewer imperative suffixes. She did not produce the nominalizing suffix *-i*. Tum also showed an asymmetry in the production of status suffixes in non-final and final positions that are discussed in section 4.

Figure 5.27. Tum's Distribution of Status Suffixes in Non-final and Final Positions



	Imperative *-an*	Indicative *-i*	Nominal *-i*	Dependent -oq
Non-final	12%	29%	0%	20%
Final	8%	14%	0%	17%
Total	20%	44%	0%	36%

5.2.4. Summary

In summary, these children produced aspectual prefixes sporadically only in indicative clauses. None of these children met the 75% criterion for aspect production in two consecutive sessions. The children produced the most contexts for the third person singular absolutive. Xhim and Tum first produced the first person absolutive prefix at high levels (at 2;7) followed by the first person plural. Xhuw and Xhim produced fewer overt forms of absolutive morphemes than Tum. Xhim's use of the absolutive was more advanced than Xhuw and he acquired the absolutive marker for first person plural absolutive at 2;8. Xhim started producing plural absolutive morphemes, but with a very low frequency. Tum was more advanced in the sense that she produced more overt absolutive forms than Xhuw and Xhim. She produced overt forms of the first person singular absolutive and started producing plural absolutive morphemes. Tum acquired the absoluitves in the order A1 > A2 > A4. All three children produced the ergative morphemes consistently in nominalized clauses.

These children produced a variety of status suffixes to distinguish imperative, indicative, nominalized, and dependent clauses even though they produced mostly intransitive verbs with bare stems in non-final and final positions. There appears to be a marked difference in status suffix production between Xhuw, Xhim, and Tum. Whereas Xhuw and Xhim produced the indicative status suffix from an early age, Tum produced it sporadically by the age of 3;1. Tum preferred the use of the dependent suffix, while Xhuw and Xhim did not. Table 5.27 provides a summary of intransitive verb inflection that the three children have mastered.

Table 5.27. Summary of Mastery of Intransitive Verb Inflection

Child	Aspect	Absolutive	Status
Xhuw	none	none	indicative *-i* (1;11)
Xhim	incompletive (2;6)	none	indicative *-i* (2;3)
Tum	incompletive (2;9)	none	only dependent *-oq* (3;0)

5.3. Productivity

In this section I analyze the productivity of the children's verb inflection. I examine whether Q'anjob'al children use inflections on the intransitive verbs productively even though they do not always produce verb affixes in their obligatory contexts. The rich morphology of Q'anjob'al helps us to evaluate the dimensions of productivity of intransitive verb inflection of these children. I follow Gathercole, et. al.'s (1999) work on productivity to evaluate productivity in Q'anjob'al. Gathercole et al. suggest that children should produce verbs with inflectional contrasts in order to rule out the possibility that the children are simply producing memorized verb forms. Studies on the acquisition of the verbal morphology in Romance languages (Pizzuto & Caselli, 1994; Fernández Martínez, 1994; and Gathercole, et. al., 1999) have defined productivity based on the use of the verb root plus its inflectional morphology.

An inflection is considered productive if it is used with two different verb roots as in (28). In (28)a the incompletive aspect *ch-* is prefixed to the intransitive verb *el* ‘to exit’, while in (28)b, it is prefixed to the intransitive verb *b’il* ‘to move’.

(28) a. **chel** wich. Xhim (2;3)
= ch-ø/el witz
INC-A3s-exit hill
‘S/he falls in the hill.’

b. **chpil** nani. Xhim (2;5)
= ch-ø-/b’il nani
INC-A3s-move now
‘She/he/it moves now.’

In contrast, a verb stem is considered productive if it is used with two different inflectional morphemes as illustrated in (29). In (29)a, the intransitive verb *el* ‘to exit’ is prefixed by the incompletive aspect *ch-* in indicative context. In (29)b, the same intransitive verb appears as a complement of the transitive verb *k’ub’ej* ‘to hide, keep’, and because it appears in non-final position, it does not take the dependent suffix *-oq*. In (29)c, the same intransitive verb takes the suffix *-an* in an imperative context.

(29) a. **chel** kachan. Xhim (2;8) Indicative
= ch-ø/’el k’atxan.
INC-A3s-exit clear
‘The sun is coming out.’

b. hal kupej **el** pa. Xhim (2;8) Dependent
= mayal-ø *s/k’ub’e-j /el *s-b’a
ADV-A3s E3s-hide-DTV DIR E3s-REFL
‘S/he hid herself/himself already.’

c. **elan** lus. Xhim (2;8) Imperative
= /el-an lus.
exit-IMP Lucy
‘Lucy, get out!’

For the acquisition of the verb morphology in imperative, indicative, nominalized, and dependent contexts in Q'anjob'al I follow Pizzuto & Caselli (1994), Fernández Martínez (1994), and Gathercole, et. al.'s (1999) productivity criteria, but I consider: i) aspect type (for indicative clauses), ii) person and number, and iii) status suffixes, which allows a separate evaluation of productivity for each of these dimensions. Gathercole et al. analyzed the productivity of verb inflection in Spanish. Spanish verbs have a single inflection that marks a combination of tense and agreement. Thus, Spanish only has a single dimension of contrast marked by the verb inflection. Intransitive verbs (including transitive verbs) in Q'anjob'al have separate affixes for aspect, subject, and status suffixes. Thus, the inflectional paradigm for intransitive verbs in Q'anjob'al consequently has three dimensions of inflectional contrast compared with the single dimension for Spanish, and therefore three possible degrees of productivity.

For this productivity analysis of verb inflection I analyzed only overt inflections. For aspect I counted the overt forms in obligatory contexts, which included only the entire verb forms. For person I counted only the overt absolutive forms, e.g. entire forms and the forms without an aspect prefix. For the status suffixes I included bare stems in non-final and final positions and entire forms that showed an overextension of the status suffix to non-final position. The inclusion of bare stems for the non-final position helps to see not only overextension of the status suffixes to non-final position but also the productivity of these suffixes in different clause types. I only counted intransitive verbs with regular use of status suffixes, which means I did not count intransitive verbs where the suffix is opaque such as the intransitive verb *je'* 'can' or *tit'* 'to come'. I also excluded other suffixes such as *-teq*/*-toq* marked on the verb to indicate directions. The productive analysis of status suffixes helps to assess the children's verbs in the four clause types. The summaries of the productivity of aspect, absolutive, and status suffixes discussed in

this section were taken from the data in Appendix A for Xhuw, Appendix B for Xhim, and Appendix C for Tum.

5.3.1. Productivity of Aspect

Xhuw produced nine different verb types (*oq'* 'to cry', *toj* 'to go', *ul* 'to come', *ay* 'to get down', *chel-lay* 'to be held on lap', *el* 'to exit', *jay* 'to come', *lajw-* 'to be finished', and *ok* 'to enter') with an incompletive aspect prefix intransitive verbs between the ages of 2;0 to 2;4. All of the verbs had third person subjects. It is possible that Xhuw produced these verbs as frozen forms since she did not vary aspect or person.

In contrast, Xhim produced intransitive verbs with different aspect and different person prefixes. At 2;4, he produced the intransitive verb *el* 'to exit' in the incompletive aspect and *el ul* 'to come out' in the potential aspect. At the same age, he produced the intransitive verb *ok ul* 'to come outside' without an aspect marker in a dependent context. At 2;5 he produced the intransitive verb *el* with the completive aspect. He continued to produce aspect contrasts with the intransitive verb *el* in the rest of the recordings, but only added aspectual contrasts for the verbs *ay lek* 'to stand' and *ay pis* 'to sit down' at 2;9. Xhim thus displayed a more advanced level of aspect productivity compared to Xhuw. He produced four intransitive verbs (*el*, *ok ul*, *ay lek*, and *ay pis*) with aspectual contrasts by 2;9 as shown in Table 5.28.

Table 5.28. Xhim's Contrast Aspect Marking

	Inc/Com	Pot/Dep	Inc/Dep
2;4	---	el ul	ok ul
2;5	el	---	---
2;8	---	---	el ul
2;9	el	ay pis	el ul, ok ul

As Table 5.29 shows, Tum displayed still more advanced aspectual productivity. She produced a greater variety of aspect prefixes than Xhuw and Xhim, and produced more verbs with aspectual contrasts. At 2;8 she produced the intransitive verbs *ay ul* 'to go_down' with a contrast between incompletive and potential, incompletive and dependent, and potential and dependent. At 3;1 she produced three additional verbs *b'et* 'to go' and *q'anjab'* 'to talk' with incompletive and potential contrasts. At the same age, Tum also showed contrast of incompletive and completive aspects with the intransitive verb *b'et*.

Table 5.29. Tum's Contrast Aspect Marking

	Inc/Pot	Inc/Com	Inc/Dep	Pot/Dep
2;7	---	---	ok ul	
2;8	ay ul	---	ay ul	ay ul
2;11	ay	---	---	---
3;1	toj, q'anjab'	b'et	---	---

5.3.2. Productivity of Person

Xhuw produced the majority of her intransitive verbs marked for either first or third person singular. At 2;0 and at 2;1 she produced the intransitive verb *toj* 'to go' with contrastive marking for first and third persons. The only other contrast she produced for person was on the intransitive verb *way* 'to sleep'. At 2;0 she produced *way* with a first person plural absolutive marker and at 2;3 she produced this verb with second and third person ergative prefixes. Xhuw produced more contrasts for person than for aspect, but by the age of 2;4 she produced only person contrasts on two intransitive verbs.

Most of Xhim's intransitive verbs appeared with first and third person singular and first person plural. As shown in Table 5.30, at 2;4 Xhim produced the intransitive verb *ok ul* 'to come in' with contrastive marking for third person singular and third person plural. Xhim also produced other intransitive verbs such as the intransitive verb *toj* 'to go', that appeared at

different ages and with different person marking. At 2;5 he produced *toj* with first and second person singular absolutive; at age 2;8 he produced the same verb, but with the contrast between first person singular and first person plural absolutive; and at age 2;9 he produced the same verb, but with a contrast of first and third person singular absolutive. At 2;9 Xhim produced the intransitive verb *el* 'to exit' with a contrast between first and third person singular absolutive and a further contrast with second person singular ergative, in which *el* occurred in nominalized context. Xhim produced more contrasts with person marking than with aspect marking on intransitive verbs.

Table 5.30. Xhim's Contrast Person Marking

	A1s/A2s	A1s/A3s	A1s/A3s/E2s	A3s/A3p	A1s/A1p
2;4	---	---	---	ok ul	---
2;5	toj	---	---	---	---
2;8	---	---	---	---	toj
2;9	---	toj, mulnaj, way	el	---	---

Most of Tum's intransitive verbs appeared with first and third person singular absolutive (Table 5.31). Tum was more advanced than Xhuw or Xhim given that she showed contrasts of person marking on her intransitive verbs starting at 2;7. At this age she produced her intransitive verbs primarily with a contrast between first and third person singular markings. For example (at this age 2;7) the intransitive verb *aj* 'to go_up' appeared with contrastive marking of first and third person singular absolutive. At 3;1, with the same intransitive verb (*aj*), Tum showed a contrast marking of first person singular and first person plural absolutive. At 2;11 Tum produced the intransitive verb *ay* 'to go_down' showing a contrast between first and third person singular absolutive, and the third person singular ergative given that the intransitive verb occurred in nominalized context. Further contrast of person marking is illustrated in Table 5.31 below.

Table 5.31. Tum's Contrast Person Marking

Age	A1s/A3s	A1s/A1p	A2s/A3s	A1s/A2s/E3s	E1s/E3s	A1s/A2s/E1s
2;7	aj, ay, kam	---	---	---	---	---
2;8	b'et, kan, oq', q'aj	---	ante-lay	toj	---	---
2;9	tx'aj-w	---		toj	---	---
2;10	b'et, q'anjab'	---	---	---	---	---
2;11	---	toj	---	ay	oq'	q'anjab'
3;1	b'et	aj, toj	---	---	---	---

5.3.3. Productivity of Status Suffixes

Recall that the suffix *-i* is used in indicative (incompletive and completive aspects) and nominalized contexts, while the suffix *-oq* is used in the potential and dependent contexts. Both suffixes (*-i*/*-oq*) surface only in final position. The suffix *-an* in imperative contexts surfaces in both non-final and final positions. To assess suffix productivity, I combined the non-final and final uses into a single analysis to see if the children produced verbs with contrasting status suffixes.

Xhuw produced most of her intransitive verbs with the *-i* suffix and the imperative *-an* suffix, but still produced relatively few verbs with contrasting suffixes (Table 5.32). At age 2;0, she produced the intransitive verb *way* 'to sleep' with the indicative (*-i*), nominalizing (*-i*), and dependent (*-oq*) suffixes. Between the ages 2;1 and 2;4 she produced six intransitive verbs with contrasting status suffixes (*el*, *way*, *ay pis*, and *toj*). She produced contrasts between the indicative (*-i*), potential (*-oq*), and imperative (*-an*) status suffixes. The suffix *-an* appeared at 2;1 with the intransitive verb *ay pis* 'to sit'.

Table 5.32. Xhuw's Contrast Suffix Marking

Age	Pot/Dep	Ind/Pot	Ind/Imp	Ind/Nom/Dep	Ind/Nom/Imp	Nom/Imp	Pot/Imp
2;0	---	---	---	way	---	---	---
2;1	el	toj	---	---	---	---	ay pis
2;2	---	---	toj	---	---	---	---
2;3	---	---	---	---	toj	way	---
2;4	---	toj	---	---	---	---	---

Xhim produced his intransitive verbs primarily with the indicative suffix *-i* and the suffix *-oq* in potential aspect and dependent context (Table 5.33). At 2;4 he produced the intransitive verb *ok* 'to enter' with indicative (*-i*), imperative (*-an*), and dependent (*-oq*) suffixes. Between 2;4 and 2;8, Xhim produced the intransitive verb *toj* 'to go' with the indicative (*-i*), potential (*-oq*), and imperative (*-n*) suffixes.

Table 5.33. Xhim's Contrast Suffix Marking

	Ind/Imp/Dep	Ind/Pot/Imp (-n)	Ind/Pot	Imp/Pot
2;4	ok	toj	el	---
2;5	---	---	el	---
2;8	el	toj	laj-w	---
2;9	---	---	---	ay

Most of Tum's intransitive verbs appeared with the indicative (*-i*) and dependent (*-oq*) suffixes (Table 5.34). She produced more intransitive verbs, but with few contrasting suffixes compared to Xhim. At 2;7 she produced the intransitive verb *ok* 'to enter' with the indicative (*-i*) and dependent (*-oq*) suffixes. At the same age, she produced the intransitive verb *toj* 'to go' with the indicative (*-i*) and imperative (*-n*) suffixes. At 3;1 she used the intransitive verb *ok* 'to enter' with the nominalized suffix *-i*.

Table 5.34. Tum's Contrast Suffix Marking

	Ind/Dep	Ind/Imp (-n)	Ind/Imp (-n)/Pot	Ind/Imp
2;7	ok	toj	toj	---
2;8	---	---	---	oq'

5.3.4. Summary

As Gathercole, et. al (1999) have shown for the productivity analysis for verb inflection in Spanish, in Q'anjob'al we find that not all of the children's verb inflections showed productivity. These data suggest that Q'anjob'al children begin to mark aspect contrastively at the age of 2;9.

Before that time, they produced verbs without productivity of aspect. They made an initial contrast between the incompletive and potential aspects. For example, Xhuw produced only the incompletive aspect on a limited number of intransitive verbs such as *toj* 'to go' and *oq'* 'to cry'. Xhuw's incompletive aspect can be considered to be a frozen form. The productivity analysis complements the frequency analysis to show that Xhuw had not acquired aspect. Xhim and Tum also produced primarily intransitive verbs in the incompletive aspect and fewer contexts of the completive and potential aspects. However, although Xhim and Tum produced incompletive, completive, and potential aspect, they produced four and six verbs respectively with aspectual contrast. The productivity and frequency analyses suggest that Q'anjob'al children only begin to use aspect prefixes productively at 2;9.

As for absolutive marking, these children produced intransitive verbs primarily with first and third person singular absolutive. More precisely, Xhuw produced only two verbs with person contrast by the age of 2;4. Xhim also showed fewer cases of contrast between first and third person singular absolutive, but within different aspects and with different clause types. Tum showed more contrasts of first and third person singular absolutive and fewer contrasts of second person singular absolutive and first person plural absolutive in incompletive and potential aspects. Tum produced more contrasts of person marking compared to Xhuw and Xhim. Thus, Q'anjob'al children begin making person contrasts before they produce intransitive verbs with contrasting aspect prefixes.

More interestingly, these children produced more intransitive verbs with contrasting status suffixes as well as producing a greater variety of status suffixes. Xhuw produced four verbs with contrasting status suffixes by the age of 2;4. These results indicate that these children produced

more contrasts for intransitive verb status than for aspect or person. The productivity analysis shows that Tum did not show contrastive use of her status suffixes compared to Xhuw and Xhim.

Overall, these children make contrasts for person before making contrasts for aspect. Although the status suffixes are partly linked to aspect distinctions, the children's production of status suffixes appears to be independent of aspect marking. The children produced the person markers with a low frequency, and did not display many contrasts for person before the age of 2;9. These data show that Q'anjob'al children produce intransitive verbs with contrasting status suffixes before making contrasts for person and aspect. Table 5.35 shows a summary of the productivity of the three children's intransitive verb inflections.

Table 5.35. Productivity of Intransitive Inflection

Child	Aspect	absolutive	status suffix
Xhuw	-	-	potential -*oq*/dependent -*oq* (2;1)
	-	-	indicative -*i*/potential -*oq* (2;1)
	-	-	indicative -*i*/nominalized -*i*/dependent -*oq* (2;0)
	-	-	indicative -*i*/nominalized -*i*/imperative -*n* (2;3)
Xhim	Inc/Com (2;5)	A3s/A3p (2;4)	indicative -*i*/imperative -*an*/potential -*oq* (2;4)
	-	A1s/A2s (2;5)	indicative -*i*/potential -*oq*/imperative -*n* (2;4)
	-	A1s/A2s/A3s (2;9)	-
Tum	Inc/Pot (2;11)	A1s/A3s (2;7)	indicative -*i*/dependnet -*oq* (2;7)
	Inc/Com (3;1)	A1s/A2s/A3s (2;8)	indicative -*i*/imperative -*n* (2;7)
	-	-	indicative -*i*/imperative -*an* (2;8)

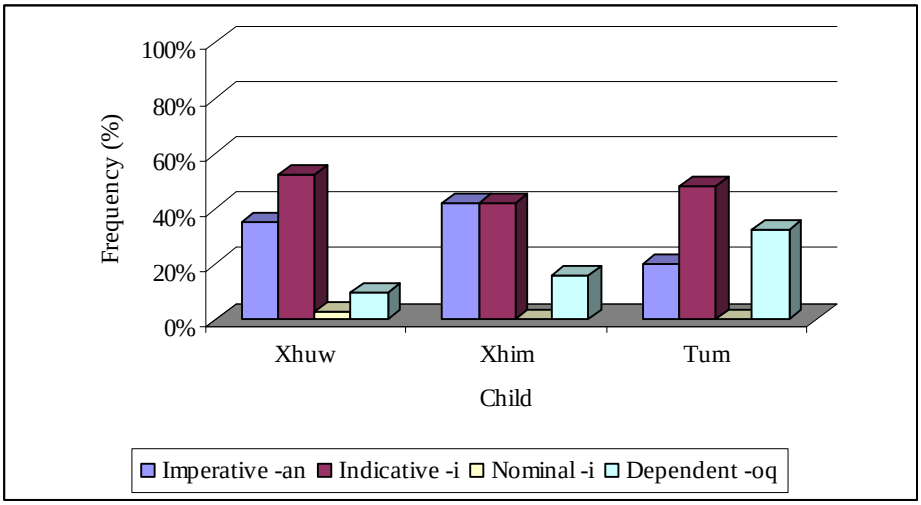
5.4. Errors

Further evidence of productivity is found with the types of errors that these children produced. In this section I explore the three children's errors: i) overextension of status suffixes to non-final position, ii) omission in final position, iii) use of status suffixes in inappropriate aspect, iv) use of independent pronouns instead of absolutive morphemes, vi) nominalized intransitive verbs without a conditioning context.

5.4.1. Overextension of Status Suffixes in Non-final Position

Recall that the indicative (*-i*), nominalized (*-i*), and dependent (*-oq*) suffixes are deleted in non-final position; they appear only in final position. Only the imperative suffix *-an* surfaces in both non-final and final positions. These children extended the indicative, nominalizing, and dependent suffixes in non-final position as shown in Figure 5.28. In indicative clauses there is a high frequency of overextension of status suffixes to the non-final position. Xhim's use of dependent verb forms was more advanced than Xhuw's. Nevertheless, he still overextended the dependent suffix in non-final positions. There is evidence that Tum overgeneralized the non-final position constraint to the imperative suffix up to the age of 2;9. Even though she was more advanced than Xhuw or Xhim in the production of dependent verb forms, she still overgeneralized the status suffix *-oq* to non-final position.

Figure 5.28. Children's Overextension of Status Suffixes in Non-final Position

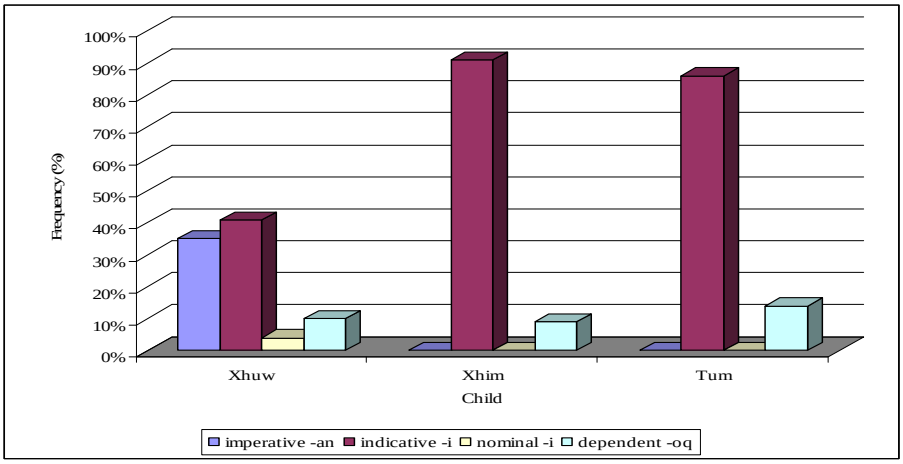


	Imperative -an	Indicative -i	Nominal -i	Dependent -oq
Xhuw	35%	52%	3%	10%
Xhim	42%	42%	0%	16%
Tum	20%	48%	0%	32%

5.4.2. Omission of Status Suffixes in Final Position

The indicative (-*i*), nominalizing (-i) and dependent (-*oq*) suffixes, except the imperative suffix -*an*, are deleted in non-final position only. However, these children omitted the imperative, indicative, nominalizing, and dependent suffixes not only in non-final position but also in final position as shown in Figure 5.29. Xhuw produced root intransitive verbs in indicative and dependent clauses with about the same frequency. She also produced root imperative and nominalized intransitive verbs. In contrast, Xhim and Tum produced more root indicative intransitive verbs than root dependent intransitive verbs. They did not drop the imperative suffix -*an* in final position. These results suggest that these children still overextended the non-final position constraint to final position. Furthermore, they applied this constraint to the imperative suffix -*an*, given that it appears in non-final and final positions in the adult grammar (Xhuw's data).

Figure 5.29. Children's Omission of Status Suffixes in Final Position



	Xhuw	Xhim	Tum
imperative -*an*	35%	0%	0%
indicative -*i*	41%	91%	86%
nominal -*i*	4%	0%	0%
dependent -*oq*	10%	9%	14%

5.4.3. Status Suffixes with Incorrect Aspect/Clause

The few errors of use of status suffixes with incorrect aspect or incorrect clause found in the child data are shown in (30) and (31). Tum used status suffixes with the incorrect aspect of the verb as shown in (30). In (30)a, instead of using the suffix *-oq* to indicate the potential aspect of the intransitive verb *saqch* 'to play', she used the indicative suffix *-i*, while in (30)b she used the dependent suffix *-oq* in place of the indicative suffix *-i*. These errors did not occur with incorrect verb types as in Yucatec (Pfeiler, 2003).

(30) a. ja to qin **saqchi.** Tum (2;11) *-oq* > *-i*
=ja tol q-in /saqch-!i
yes COMPL POT-A1s play-IV
'Yes, that I will play.'

b. chin **k'ajab'oX.** Tum (3;1) *-i* > *-oq*
=ch-in /q'anjab'-!oq.
INC-A1s talk-IV
'I talk.'

In (31), Xhim produced the matrix clause and the dependent clause, but he used the indicative intransitive suffix *-i* instead of the dependent suffix *-oq* in non-final position.

(31) chya **puli** pay tu la. Xhim (2;8) *-i* > *-oq*
= ch-ø-y/aq' /pul-!i b'ay tu la
INC-A3s-E3s-give pour-iv pre there
'S/he pours it there.'

5.4.4. Independent Pronouns

The frequency analysis of absolutive morphemes showed that Xhuw did not produce absolutive prefixes in their obligatory contexts. She may have produced the absolutive prefixes as frozen forms. The few cases of absolutive morphemes for first and second person singular and

first person plural raise the question about whether these children acquire absolutive morphemes as prefixes or suffixes following a Tzotzil pattern (De Leon, 1999) or as an extension of independent pronouns to absolutive morphemes as reported in K'iche' (Pye, 1990) and Tzeltal (Brown, 1998). It turns out that Xhuw and Xhim did not produce many cases of use of independent pronouns instead of absolutive morphemes, but they used some frozen forms of the first person absolutive morpheme, which are grammatical in the adult grammar of Q'anjob'al as shown in (32)a.

(32) a. **toyin** talo. Xhuw (1;11) absolutive 1sg (frozen form)
= /toy-in *b'ay karro.
go-A1s PRE car
'I go to the car.'

b. *toy-**ach**. Unattested
go-a2s
'You go.'

In (33)a, Xhuw used the progressive *lanan* 'in progress' in which the intransitive stem *low* 'to eat' should take an ergative morpheme *hin-* for first person singular as a prefix. Instead, Xhuw used it after the intransitive verb, which makes it look like an independent pronoun. If *hin* in (33)a is an independent pronoun we might expect Xhuw to produce independent pronouns instead of ergative morphemes not only in nominalized clauses but in indicative clauses as reported in K'iche (Pye, 1990) and Tzeltal (Brown, 1998).

(33) la **low** hin. Xhuw (2;4) Independent pronoun
= lan hin/lo-w-*i
PROG E1s-eat-AP-NOM
'I am eating.'

The data in (34) show that Xhim used the independent pronoun *ayin* after the intransitive verb *toj* ‘to go’ instead of fronting it.

(34) toX **ayin** a wewe. Xhim (2;4)
= ayin *q-*in /toj wewe.
PRO POT-A1s go Huehue
‘I will go to Huehuetenango.’

One of the striking findings with Tum’s data is that she produced more cases of independent pronouns replacing absolutive morphemes as shown in (35), which supports Pye’s (1990) findings for K’iche’ and Brown’s (1998) finding to Tzeltal. In (35)a, Tum fronted the absolutive morpheme *-hin* for first person singular, while in (35)b she used the absolutive morpheme *hin* after the intransitive verb *toj* ‘to go’. In (35)c, she used the frozen form of the absolutive morpheme *-in*, which is common in the adult grammar of Q’anjob’al. These were the only errors of this type found in the child data.

(35) a. **hin** ch’okoloX. Tum (2;7)
= ch-**in** /’ok /ol-oq
INC-A1s enter DIR-DEP
‘I enter’

b. ’icham toj **hin** b’ey. Tum (2;8)
= ch-**in** /toj b’ay icham
INC-A1s go PRE old man
‘I go where the old man is.’

c. **toyin** xhi ka la. Tum (2;7)
= /toy-**in** /xhi kaq la.
go-A1s said like that
‘I go, s/he said like that.

It might be the case that these children undergo a stage where they get the use of absolutive morphemes right, but then in the next stage they find a conflict between using absolutive morphemes or independent pronouns. Then, at a later stage, they go back to the use of absolutive morphemes and use them correctly. These few examples of independent pronouns instead of absolutive morphemes can be similar to Tzotzil, where the absolutive morpheme is suffixed to the verb root.

5.4.5. Nominalized Intransitive Verbs

Although Xhim correctly produced an ergative prefix, he added the suffix *-il* after the intransitive verb *mulnaj* 'to work', which is not expected in the adult grammar. I assume that it is an overgeneralization of the nominalizer suffix *-i* in non-final position. Another possible explanation for the form *-il* is that Xhim is overextending the suffix *-il* that indicates abstractness in Q'anjob'al.[36] In the context of *lanan*, this looks like Ch'ol or Yucatec. The suffix *-il* as abstract would derive a noun from the intransitive verb *mulnaj* 'to work'. Xhim produced only two cases of nominalized intransitive verbs, where the switch from absolutive to ergative is clear, but without a conditioning context as shown in a in contrast between (36)a and (36)b.

(36)	a.	lan **hamulnajil** tom. = /lan ha-mulnaj-¡il dom PROG E2s-work-ABS Dominga 'Dominga you are working.'	Xhim (2;9)	Absolutive > ergative
	b.	**yaytok**. = ~~context~~ y/ay-toq ~~context~~ E3s-go-DIR 'S/he/it is going down.'	Xhim (2;8)	Without context

[36] Further analysis is needed for the acquisition of this suffix in Q'anjob'al; it is beyond of the scope the present study.

Tum produced more cases of nominalized intransitive verbs, but without a preceding conditioning context as shown in (37)a. She also showed some types of errors with nominalized intransitive verbs. In (37)b, instead of dropping aspect marking and using an ergative morpheme due to the presence of *pum*, an onomatopoeic form of 'to fall', she produced an indicative verb form and not a nominalized verb form. In (37)c, she used *ow* 'to be angry', which also conditions nominalization, but she omitted the ergative morpheme. Tum's errors in nominalized context can be assumed as without conditioning or a possible extension of ergative morphemes to absolutive morphemes, considering Q'anjob'al as an accusative/nominative language and not as an ergative.

(37) a. **yo'** icha. Tum (2;8) No conditioning context
= y/oq' icham
E3s-cry old man
'An old man cried.'

b. pum **ch'aj** ch'en. Tum (2;8) Nominalized > Indicative
= /pum !ch-ø/aj ch'en
pum INC-A3s-go.up PRO (metal)
'Pum, it goes up.'

c. 'ow **ay** hinchik'il yoj 'ab' chikay. Tum (2;11) Ergative omission
= ow *y/ay hin-chik'-il y-uj jab' chikay
angry E3s-fall E1s-blood-ABS E3s-RN little grandmother
'I am bleeding a lot by little grandmother.'

5.4.6. Summary

The Error Analysis shows two main types of errors: omission and overextension. These children omitted aspect and absolutive morphemes, which made to produce intransitive verb stems. They also omitted intransitive status suffixes in final position. They overextended the status suffixes in non-final position. The extension of status suffixes in non-final position is similar to findings for the acquisition of status suffixes in K'iche' (Pye, 1990), but different from

findings of the acquisition of status suffixes in Yucatec (Pfeiler, 2003). These children are still acquiring the constraint of status suffixes in non-final and final position. Even though in a lower frequency, these children used status suffixes with incorrect aspect or incorrect clause. I consider this finding as new, given that it is not similar to Yucatec. In Yucatec, children use status suffixes with the incorrect verb type. These children also replaced absolutive morphemes with independent pronouns, which can be similar to findings in K'iche' (Pye, 1990) or Tzeltal (1998), although in these two languages, children replaced ergative morphemes by independent pronouns, but not absolutive morphemes as in Q'anjob'al. Overall, these children showed errors of omission of the status suffixes in final position and their extension to non-final position.

5.5. Conclusion

In this chapter I presented the acquisition of the intransitive inflection in Q'anjob'al by applying different kind of analyses: clause type analysis, verb form analysis, frequency analysis, productivity analysis, and error analysis. Tum produced more intransitive verbs in indicative contexts than Xhuw or Xhim, while Xhuw produced more verbs in imperative clauses than Xhim or Tum. Xhuw's indicative and imperative clauses appeared around the same age (1;9). Her nominalized and dependent clauses appeared later and with a lower frequency; both clause types appeared around the same age, 2;0. Xhim and Tum produced indicative and dependent clauses in their first sessions (Xhim 2;3 and Tum 2;7), while nominalized and imperative clauses appeared later and with a lower frequency. This acquisition order for the four types of clauses suggests that Q'anjob'al children may have more difficulties in producing nominalized and dependent verbs. The different profiles suggest Xhuw may represent an earlier stage of development than Xhim and Tum.

The higher frequency of indicative contexts found in the data implies that these children may produce intransitive verb forms that lack inflection for aspect, absolutive and status suffixes as in other Mayan languages. Furthermore, the acquisition pattern shown by these three children raises the question of whether the variety of verbs in the child data is due to individual differences, development, or type of complement constructions from the input. For example, the higher frequency of dependent contexts from Xhim and Tum may be due to the high frequency of dependent constructions from the input, and the low frequency of nominalized forms may also be attributed to the low frequency in the input. I explore the frequency of the type of clauses (indicative, nominalized, dependent, and imperative) and the frequency of the verbal inflection in the input of Q'anjob'al in chapter 8.

Given that the verb form analysis showed that the three children produced verb stems in imperative, indicative, nominalized, and dependent clauses, one might expect their using just one bare stem form as a default (e.g. imperative stem) and overextending it across the four types of clauses. However, the child data discussed in this chapter showed that these children did not assume the imperative stem as the default form. Although they produced mostly bare stems, they were able to distinguish the status suffixes of imperative, indicative, nominalized, and dependent clauses. The use of bare stems in both positions suggests that these children are still acquiring the constraint of the status suffix in non-final position versus final position. The verb form analysis also showed a high frequency of overextension of status suffixes occurring in non-final position in indicative intransitive clauses. One possible explanation for this overgeralization is that Q'anjob'al children assume that all suffixes are used in final as well as in non-final positions. The same overgeneralization is seen in dependent clauses, where the three children produce the suffix *-oq* in non-final position. In other words, Q'anjob'al children may assume that all

intransitive verbs drop status suffixes in non-final position. Dropping the imperative suffix *-an* in final position is a pattern that comes from the indicative, nominalized, and dependent contexts. Although they produced bare stems the most, these children were selective in the type of suffix to use in each clausal type. This can be seen in the few errors they produced.

More interestingly, while the frequency analysis shows that these children have not fully acquired the intransitive verb inflection (see 5.30), the productivity analysis provides evidence for the acquisition of the intransitive verb inflection in Q'anjob'al. Although these children did not use the intransitive verb inflection more than 75%, they showed a contrastive use of aspect, absolutive, and status suffixes. Notice that these children started making contrast on their intransitive verbs first with status suffixes then with person prefixes, and finally with aspect prefixes.

Chapter 6

Transitive Verbs

Introduction

This chapter describes the acquisition of transitive verb inflection in imperative, indicative, nominalized, and dependent clauses in Q'anjob'al by applying four types of analyses: verb form analysis, frequency analysis, productivity analysis, and error type analysis. The chapter is divided into the following sections. In section 1 I present the children's clause types and verb forms. In section 2 I discuss the frequency of aspect, absolutive and status suffixes marked on intransitive verbs. In section 3 I evaluate the productivity of the intransitive verbs in the four types of clauses. In section 4 I evaluate the types of errors they produced and in section 5 I present my conclusion.

6.1. Clause Types and Verb Forms

In this section I present the distribution of three children's transitive verb forms in imperative, indicative, nominalized, and dependent clauses. I evaluate the children's verb forms based on the specific morphology of each type of clauses as shown in Table 6.1.

Table 6.1. Verb Forms and Clause Types

Features	Imperative	Indicative	Nominalized	Dependent
aspect	-	+	-	-
absolutive	-	+	+	-
ergative	-	+	+	-
suffix *-v'/-j*	+	+	-	+
suffix *-on*	-	-	+	-
suffix *-i*	-	-	+	-

To evaluate the children's transitive verb forms I followed again the types shown in (1) (Pye, et. al., 2008). I credited the child for producing the entire complex if s/he produced all the

inflectional morphemes required on the verb. The omission of aspect means that the child produced the other inflectional morphemes, but not the aspectual prefix. With the omission of aspect and absolutive criterion, the child does not produce the aspect and absolutive morphemes, but the other morphemes remain. The omission of the ergative means that all the inflectional morphemes for transitive verbs were produced except the ergative. The bare stem means that only the root verb and a status suffix were produced by the child, while the bare root means that the child did not produce any inflectional morpheme other than the verb itself.

(1) a. complete form
b. omission of aspect
c. omission of aspect and absolutive
d. omission of ergative
e. bare stem
f. bare root

The use of these category labels varies with the clause type in which the verb appears. The children were given credit only for using the entire complex in indicative contexts since this is the only context in which verbs are used with the aspectual prefix. As shown in Table 6.1, nominalized transitive verbs are not inflected for aspect, but take ergative agreement. I labeled the children's nominalized verb forms that contain both the ergative prefix and the verb root as – aspect even though they constitute complete verb forms in order to compare their form with the verb forms produced in indicative contexts. If they were labeled entire forms the category would include indicative forms with an aspect prefix and nominalized forms without aspect. Table 6.1 further shows that in nominalized contexts transitive verbs also take the suffix *-on* and they no longer take their original status suffixes. They take instead the nominalizing suffix *-i* as with intransitive verbs.

The suffix *-i* is used as a status suffix in indicative intransitive clauses as well as a nominalizing suffix in nominalized contexts. This suffix is dropped in non-final position in both types of clauses. Imperative verbs were categorized as bare stems since they contain only the imperative status suffix and lack aspectual and agreement prefixes. Dependent forms also lack prefixes for aspect and agreement and were categorized as bare stems when the status suffix appeared and as bare roots without the dependent status suffix. Dependent verbs in final position have the status suffix *-v'*/*-j*, and not *-oq* as with intransitive verbs. Children should produce stem forms rather than root forms in final position dependent clauses. Thus, the category labels apply strictly to the forms produced across the contexts rather than to the forms that might be appropriate to specific contexts. This labeling makes it possible to compare verb forms across the contexts of use. In imperative forms, there are some verbs like *lo'* 'to eat' that does not have an imperative suffix. I consider forms like this as bare root.

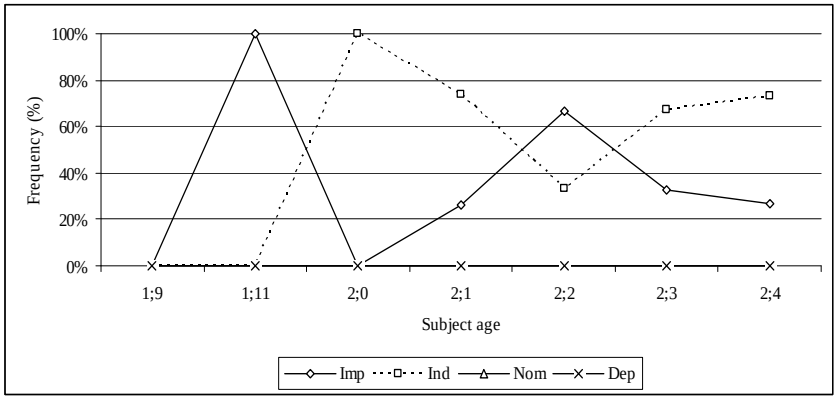
The imperative suffix for derived transitive verbs *-j*, unlike the imperative status suffix for root transitive verbs *-v'*, remains in both non-final and final positions. Thus, since the imperative form for derived transitive verbs has only a single inflection that does not change with position, it is the simplest form, and the one form that children might acquire early and overextend to other contexts as the Symbolic Model (e.g. Bybee, 1995) or Salustri and Hyams (2003) would predict. Thus, a default form for intransitive verbs is different from a default form for transitive verbs. Therefore we might expect Q'anjob'al children producing each default form in each verb type or they might produce only one default form and overextend it to the other types of forms without considering the verb types.

6.1.1. Xhuw's Clause Types and Verb Forms

6.1.1.1. Xhuw's Clause Types

In non-final position (Figure 6.1) Xhuw produced transitive verbs in indicative clauses at 2;0 and imperative clauses at age 1;11. Xhuw followed the same pattern of clause production as with intransitive verbs. Figure 6.1 also shows that Xhuw did not produce transitive verbs in nominalized and dependent clauses.

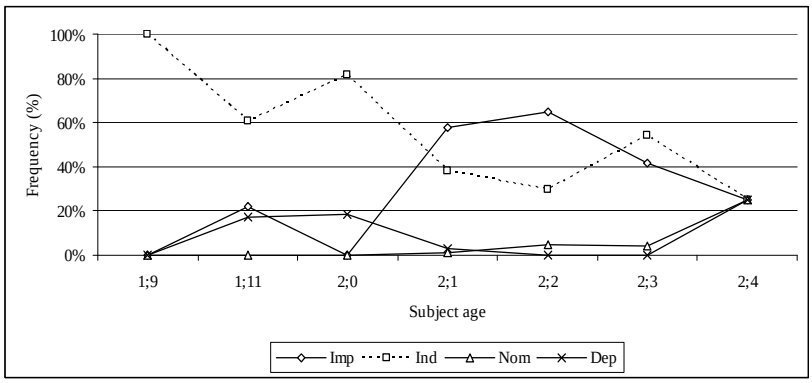
Figure 6.1. Xhuw's Transitive Clauses: Tokens in Non-final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (124)
Imp	0	2	0	10	12	14	4	42 (34%)
Ind	0	0	8	28	6	29	11	82 (66%)
Nom	0	0	0	0	0	0	0	0 (0%)
Dep	0	0	0	0	0	0	0	0 (0%)

In final position (Figure 6.2) Xhuw's transitive verbs appeared mostly with indicative and imperative clauses. A few transitive verbs in this position appeared with nominalized and dependent clauses at 1;11 and 2;1 respectively.

Figure 6.2. Xhuw's Transitive Clauses: Tokens in Final Position



Age	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (195)
Imp	0	10	0	42	13	10	2	77 (39%)
Ind	2	28	18	28	6	13	2	97 (50%)
Nom	0	0	0	1	1	1	2	5 (3%)
Dep	0	8	4	2	0	0	2	16 (8%)

6.1.1.2. Xhuw's Verb Forms

6.1.1.2.1. Imperative Transitive Verb Forms

In non-final position (Table 6.2) Xhuw produced a higher frequency of bare stems (2)a than bare roots (2)b of root transitive verbs in imperative contexts.

(2) a. **aka'** pelta. Xhuw (2;2) Bare stem
= /jaq-!a' puerta
open-IMP door
'Open the door!'

b. **a** peta. Xhuw (2;2) Verb root
= /jaq puerta
open door
'Open the door!'

Table 6.2. Xhuw's Root Imperative Transitive Verb Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
Stem	0	0	0	0	12	14	4	30 (71%)
Root	0	2	0	10	0	0	0	12 (29%)

In final position (Table 6.3) Xhuw produced imperative verbs as bare stems (3)a and in a few cases as verb roots (3)b.

(3) a. ay **teka'**. Xhuw (1;11) Bare stem
= ay /tek-a'
ay kick-IMP
'Ay, kick it.'

b. **lo'**. Xhuw (2;2) Bare root
= /lo'
Eat it!

Table 6.3. Xhuw's Root Imperative Transitive Verb Forms: Tokens in Final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
Stem	0	10	0	40	12	10	2	74 (96%)
Root	0	0	0	2	1	0	0	3 (4%)

6.1.1.2.2. Indicative Transitive Verb Forms

Xhuw's root transitive verbs that appeared in non-final position are shown in Table 6.4, while her derived transitive verbs that appeared in the same position are shown in Table 6.5. As Table 6.5 shows, Xhuw produced 67% of transitive verbs with the omission of both aspect and absolutive prefixes at the age of 2;0. At the same age, she produced transitive verbs as bare root forms. At 2;1 she used transitive verbs with complete forms, but with a lower frequency and mostly with derived transitive verb forms. There is only one case where she omitted aspect with derived transitive verbs, but she did show an optional omission of aspect or absolutive morphemes.

Xhuw sometimes produced transitive verbs with complete forms as shown in (4)a. She started using other ergative morphemes and not only the second person singular creating a consonant cluster, but deleting part of the transitive verb root. In (4)b, the transitive verb *aq'* 'to

give' occurs as /a/ in contrast to (4)a. In adult form the ejective sound /q'/ optionally occurs as /'/ (Gonzalez, et. al., 2000).

(4) a. **cha'** kuko. Xhuw (2;2) Complete verb form
= ch-ø-ø/aq' kuko
INC-A3s-E2s-give kuko
'You give kuko to him/her.'

b. uuti **chya** popo. Xhuw (2;1) Complete verb form
= jun ti ch-ø-y/aq' popo
one DEM INC-A3s-E3s-give poop
'This one is pooping.'

Table 6.4. Xhuw's Indicative RTV Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
entire	0	0	0	0	0	0	1	1 (1.4%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/abs	0	0	4	12	0	24	8	48 (67%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	0	0	0	0	0	0	0	0 (0%)
root	0	0	4	10	4	5	0	23 (30%)

Table 6.5. Xhuw's Indicative DTV Forms: Tokens in Non-final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
entire	0	1	0	6	2	0	2	11 (85%)
-asp	0	0	0	0	1	0	0	1 (7.5%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/abs	0	0	0	0	0	0	0	0 (0%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	0	0	0	0	0	1	0	1 (7.5%)
root	0	0	0	0	0	0	0	0 (0%)

In final position, Xhuw produced mostly root transitive verbs (Table 6.6) and very few derived transitive verbs. She produced derived transitive verbs with complete forms at ages 1;11 (1 token), 2;1 (6 tokens), 2;2 (2 tokens). As shown in (5)a, Xhuw produced the derived transitive suffix *-j* although with phonological changes (j>h). As for root transitive verbs in final position, Table 6.6 shows that Xhuw produced a high frequency of transitive verbs that lack aspect and

absolutive prefixes as shown in (5)a. The data in (5)b show that Xhuw also produced complete verb forms. The ergative morpheme for second person is a zero morpheme, which obscures the analysis of acquisition. However, one piece of evidence that Xhuw is acquiring the ergative morpheme for second person singular is that she changes the underlying form of the vowel of the transitive verb *iq* 'to carry' to /*e*/. An objection to this argument changing vowel quality is that Xhuw has just memorized this form; however we do not see such memorization in the child data as shown in (5)c.

(5) a. **ataneh**. Xhuw (1;11) Omission of aspect
= *ch-ø-a/tayne-j
INC-A3s-E2s-take care-DTV
'You take care of it.'

b. axh gla xhee'. Xhuw (1;11) Complete verb form
= ax ka la x-ø-ø/**e'**
here COM-A3s-E3s-get
'You got it here.'

c. to wi'. Xhuw (2;0)
= *ch-ø/toj w/**i'**
INC-A3s-go E1s-get
'I go get it.'

Table 6.6. Xhuw's Root Transitive Verb Forms: Final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
entire	0	14	8	0	0	2	0	24 (26%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/abs	0	13	10	18	4	7	1	53 (58%)
-erg	0	0	0	0	0	0	1	1 (1%)
stem	0	0	0	4	0	0	0	4 (4%)
root	2	0	0	3	1	3	0	9 (10%)

In addition to the high frequency of transitive verbs that lack aspect and ergative prefixes and transitive verbs with complete forms, Xhuw produced bare stems (6) in final position. Xhuw

produced a verb that omitted the ergative morpheme as illustrated in (7)b, which is a repetition of the form given by her cousin illustrated in (7)a.

(6) a. **pulu**. Xhuw (2;1) Bare stem
= *x-ø-*in/pul-u'
COM-A3s-E1s-pour-RTV
'I poured it.'

b. loo'. Xhuw (2;1) Bare root
= *ch-ø-ø/lo'
INC-A3s-E3-eat
'S/he/it eats it.'

(7) a. at ay ch-ø-w/il-a. Xhuw's cousin
there EXST INC-A3s-E1s-see-RTV
'I see that it is there.'

b. a xhila. Xhuw (2;4)
= at *ay ch-ø-*w/il-a'
there EXST INC-A3s-E1s-see-RTV
'I see that it is there.'

6.1.1.2.3. Nominalized Transitive Verb Forms

Xhuw produced transitive verbs in nominalized contexts in final position only. In this position (Table 6.7), she produced 5 nominalized forms with root transitive verbs, but none with derived transitive verbs. She produced bare stem (8)a and verb root (8)b forms. At 2;1 she produced a nominalized transitive verb as a complete form (8)c, but without a conditioning context. In (8)c it seems that the morpheme *x-* for completive aspect and the initial consonant of the transitive verb *xiq* 'to cut' merged into one sound or Xhuw just did not produce the completive aspect. Given that the Q'anjob'al children omit aspect, I assume the second possibility.

(8) a. a **lakohi**. Xhuw (2;3) Bare stem
= lanan-ø /lak-on-i
PROG-A3s hold-INTR-NOM
'S/he is holding it.'

b. axha **ma**? Xhuw (2;2) Verb root
= *mak *ch-ø/maq'-*on-*i?
who INC-A3s-hit-INTR-NOM
'Who is hitting her/him?'

c. oh **xhikoni**. Xhuw (2;1) complete form
= oh x-ø-ø/xiq-on-i
oh COM-A3s-E3s-cut-INTR-NOM
'Oh, s/he cut it.'

Table 6.7. Xhuw's Nominal Transitive Verb Forms: Tokens in Final Position

	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total
-aspect	0	0	0	0	0	0	0	0 (0%)
stem	0	0	0	1	0	1	2	4 (80%)
root	0	0	0	0	1	0	0	1 (20%)

The few dependent contexts that Xhuw produced with root transitive verbs in final position are shown in (9). These were the only forms that she produced. These dependent contexts that Xhuw produced were bare stems following the constraint of dependent contexts given that the verb root takes a dependent suffix in final position only. However, as the data in (9) show, the bare stem forms included mostly the verb root being cross-referenced by an ergative morpheme.

(9) Final dependent verb forms

a. **hawi**. Xhuw (1;9)
= */toj haw/i'
go E2s-get
'You go get it.'

b. to **wi'**. Xhuw (2;0)
= /toj w/i'
go E1s-get
'I go get it.'

c. chul hul **lo'**. Xhuw (2;1)
= *ch-ø/'ul /lo'
INC-A3s-come eat
'S/he comes eat it.'

6.1.1.2.4. Summary

Xhuw produced imperative and indicative clauses when the recordings started. She produced contexts of nominalized and dependent clauses only in final position. She also produced more nominalized clauses than Xhim and Tum. In both non-final and final positions, Xhuw produced imperative transitive verbs either as bare stems or bare roots. In non-final and final positions, she produced indicative transitive verbs as entire forms, lacking aspect and absolutive markings, and bare roots. She used fewer tokens of bare roots in final position than in non-final position (Table 6.8). Xhuw produced nominalized transitive verbs only in final position (Table 6.9) as lacking aspect, bare stem and bare root. In final position, she produced dependent transitive verbs, but very few.

Table 6.8. Xhuw's Transitive Verb Forms: Tokens in Non-final Position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	14%	0%	0%
-aspect	0%	1%	0%	0%
-asp/abs	0%	56%	0%	0%
-erg	0%	0%	0%	0%
stem	71%	1%	0%	0%
root	29%	27%	0%	0%

Table 6.9. Xhuw's Transitive Verb Forms: Tokens in Final Position

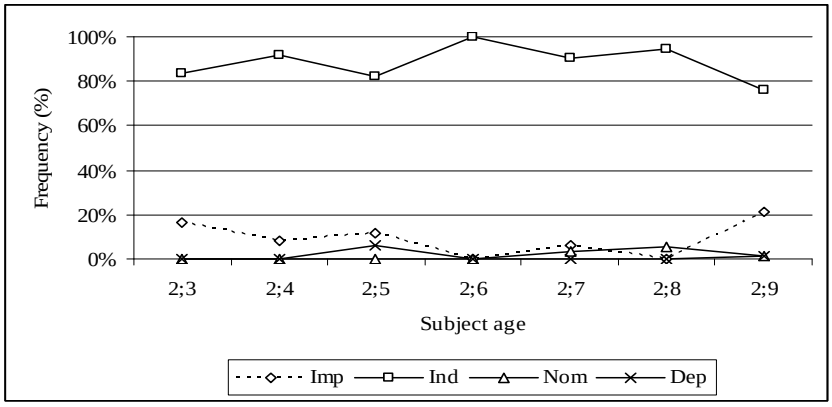
Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	26%	0%	0%
-aspect	0%	0%	20%	0%
-asp/abs	0%	58%	0%	0%
-erg	0%	1%	0%	0%
stem	96%	4%	60%	0%
root	4%	10%	20%	0%

6.1.2. Xhim's Clause Types and Verb Forms

6.1.2.1. Xhim's Clause Types

Figure 6.3 shows that in non-final position, Xhim used transitive verbs with indicative clauses at 2;3. At the same age he also used transitive verbs with imperative clauses, but with a lower frequency. In this position he produced few cases of nominalized (at 2;7) and dependent (at 2;5) clauses.

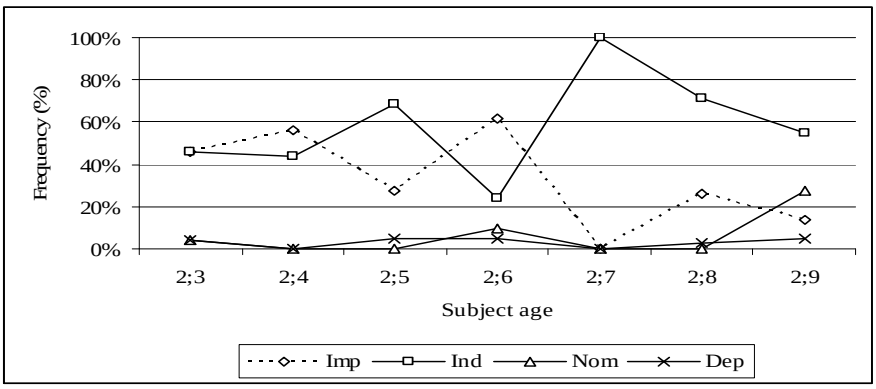
Figure 6.3. Xhim's Transitive Clauses: Non-final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (277)
Imp	1	4	2	0	2	0	14	23 (8%)
Ind	5	44	14	20	28	84	50	245 (88%)
Nom	0	0	0	0	1	5	1	7 (3%)
Dep	0	0	1	0	0	0	1	2 (1%)

In final position (Figure 6.4) Xhim produced transitive verbs with imperative and indicative clauses. In the same position, he produced transitive verbs with nominalized and dependent clauses at 2;3, but with a lower frequency.

Figure 6.4. Xhim's Transitive Clauses: Final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (205)
Imp	12	35	6	13	0	9	3	78 (38%)
Ind	12	27	15	5	17	25	12	113 (55%)
Nom	1	0	0	2	0	0	6	9 (4%)
Dep	1	0	1	1	0	1	1	5 (2%)

6.1.2.2. Xhim's Verb Forms

6.1.2.2.1. Imperative Transitive Verb Forms

Xhim produced more transitive bare stems (10)a than transitive bare roots (10)b in non-final position, but mainly with root transitive verbs (Table 6.10), given that he produced few tokens of derived transitive verbs (Table 6.11).

(10) Imperative verb forms in non-final position

a. **jila'** lim. Xhim (2;4) Bare stem
= j-/il-!a' lim
E1p-see-IMP hurry up
'Let's see it, hurry up!'

b. **ten** chin. Xhim (2;3) Verb root
= /ten xin
push then
'Then, push it!'

Table 6.10. Xhim's Root Imperative Transitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
stem	0	14	0	2	0	16	11	43 (64%)
root	1	5	2	0	2	12	2	24 (36%)

Table 6.11. Xhim's Derived Imperative Transitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
stem	0	0	0	0	1	0	2	3 (75%)
root	0	0	0	0	1	0	0	1 (25%)

In final position, Xhim produced root imperative verbs as bare stems (11)a and in a few cases as bare roots (11)b (Table 6.12). With derived transitive verbs, at age 2;4 and 2;5 he produced derived imperative transitive verbs as bare stems (Table 6.13).

(11) Imperative verb forms in final position

a. **k'olo'**. Xhim (2;3) Bare stem
= /q'ol-o'
peel-IMP
'Peel it!'

b. **pixh**. Xhim (2;3) Bare root
= /pix-*a'
tie-IMP
'Tie it!'

Table 6.12. Xhim's Root Imperative Transitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
stem	5	6	4	1	0	9	3	28 (87%)
root	3	0	0	0	0	1	0	4 (13%)

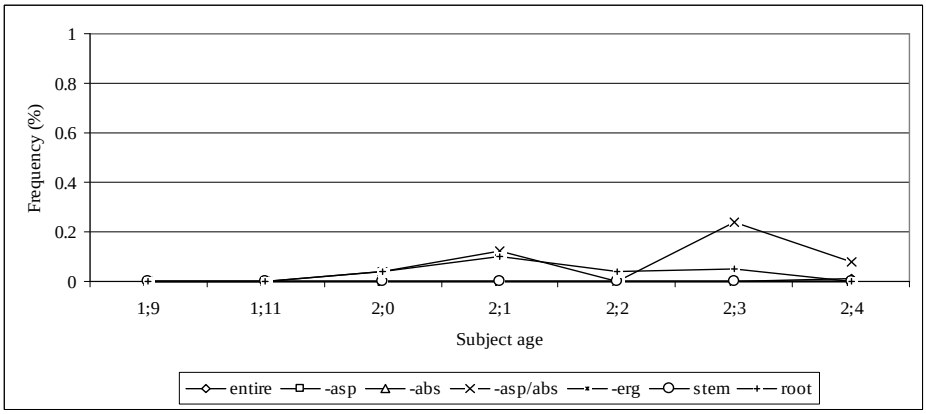
Table 6.13. Xhim's Derived Imperative Transitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
stem	0	30	1	0	0	0	0	31 (100%)
root	0	0	0	0	0	0	0	0 (0%)

6.1.2.2.2. Indicative Transitive Verb Forms

Xhim's indicative transitive verb forms in non-final position appeared with root transitive verbs (Figure 6.5) in a higher frequency compared to derived transitive verbs (Table 6.14).

Figure 6.5. Xhim's Root Transitive Verb Forms: Tokens in Non-final Position



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
entire	0	3	4	7	4	10	5	33 (15%)
-asp	0	1	0	0	0	0	0	1 (.45%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/-abs	1	21	7	8	18	56	24	135 (60%)
-erg	0	3	0	0	0	0	0	3 (1.4%)
Stem	3	4	1	1	0	2	0	11 (5%)
Root	1	12	1	1	6	10	10	41 (18%)

Table 6.14. Xhim's Derived Transitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
entire	0	0	0	0	0	4	8	12 (50%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	1	0	0	0	0	0	1 (4%)
-asp/-abs	0	0	1	2	0	2	2	7 (29%)
-erg	1	0	0	0	0	0	0	1 (4%)
Stem	0	0	0	1	0	0	0	1 (4%)
Root	0	0	0	0	0	0	2	2 (8%)

With root transitive verbs, Xhim omitted 29% of aspect and absolutive marking as illustrated in (12), but none with the omission of only the aspect prefix. He produced entire verb forms in 29% of derived transitive verbs. The exclamation point with the derivational morpheme *-e* and the status suffix *-j* in (12) shows that Xhim may have extended both morphemes in this verb given that in the input, the derived transitive verb has lost both affixes.

(12) **wuteh** pacha. Xhim (2;3) Omission of aspect & absolutive
= *ch-ø-w/uk'-!e-!j pacha.
INC-A3s-E1s-drink-DER-DTV bottle
'I drink bottle.'

Xhim produced one token where the absolutive was overtly marked, but other inflectional morphemes were dropped (13). The ergative morpheme *y-* for third person singular, which is complement of the clitic *heb'* to indicate third person plural was deleted, as well as the vowel in the transitive verb root. This was the only example of an absolutive prefix on transitive verbs found in Xhim's data.

(13) **hinl** heb'. Xhim (2;4) Omission of aspect and ergative
= *ch-in-*y/il heb'
INC-A1s-E3s-see PL
'They see me.'

In non-final position Xhim produced more root transitive verbs as bare roots (14)a than bare stems (14)b (Figure 6.5). The bare stem forms with root transitive verbs show that Xhim overextended the status suffix in non-final position.

(14) a. **man** un pampam. Xhim (2;3) Transitive verb root
= *x-ø-ø/man jun bombon
COM-A3s-E3s-buy one lolipop
'S/he bought a lolipop.'

b. **mana'** hinlolo'. Xhim (2;3) Bare stem
= ch-ø-ø/man-!a' hin-lolo'
INC-A3s-E3s-buy-RTV E1s-candy
'S/he buys my candy.'

A few omissions of the ergative prefix were found in Xhim's data. For example, when he was asked by his grandmother to say the verb *xwab'* in (15)a, he produced the form *xhab'* (15)b. He dropped the first person singular ergative morpheme *w*-.

(15) a. to'al **x-ø-w/ab'** yel kachi. Xhim's grandmother
just COM-A3s-E1s-feel hurting inc-e2s-say
'Say, I just hurt myself.'

b. **xhab'** pel. Xhim (2;4) Omission of ergative
= x-ø-*w/ab' yel
COM-A3s-E1s-feel hurting
'I hurt myself.'

In addition to the forms that lack aspect and absolutive, bare stem, and bare roots, Xhim produced complete verb forms (16)a. Xhim also started using ergative morphemes other than the second person singular (16)b.

(16) Complete verb forms

a. **chela'** 'un tu la. Xhim (2;4)
= ch-ø-ø/el-!a' jun tu la
INC-A3s-E2s-see-RTV one DEM DEM
'You see that.'

b. **chyal** hekul. Xhim (2;4)
= ch-ø-y-/al hin-k'ul
INC-A3s-E3s-say E1s-stomach
'I want to.'

In final position (Table 6.15) Xhim produced a high frequency of root transitive verbs that lack aspect and ergative prefixes (17).

(17) pipH **wila'**. Xhim (2;3) Omission of aspect and ergative
= pip *ch-ø-w/il-a'
car INC-A3s-E1s-see-RTV
'I see a car.'

In (18)a, Xhim produced the transitive verb /*i*/ 'to take, have' as /*e*/, due to the use of the ergative morpheme for second person singular. In addition, Xhim used the inflectional morphemes of aspect and ergative morphemes with consonant initial transitive verbs (18)b.

(18) Complete verb form

a. pay jun malta **xe'**. Xhim (2;9)
= b'ay jun marta x-ø-ø-/e'
PRE one Marta com-a3s-e2s-get
'You got it from Marta.'

b. **chalo'**. Xhim (2;3)
= ch-ø-a/lo'
INC-A3s-E2s-eat
'You eat it.'

Table 6.15. Xim's Root Transitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
entire	3	7	0	0	3	1	5	19 (18%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/abs	6	12	15	4	7	20	7	71 (69%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	2	5	0	1	0	1	0	9 (9%)
root	0	1	0	0	3	0	0	4 (4%)

With derived transitive verbs, Xhim produced 41% of omission of aspect and absolutive, 29% of complete verb forms, and 29% as stem forms in final position. He did not use derived transitive verbs with root forms (Table 6.16).

Table 6.16. Xim's Derived Transitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
entire	1	0	0	0	3	1	0	5 (29%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/abs	0	0	0	0	7	0	0	7 (41%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	0	5	0	0	0	0	0	5 (29%)
root	0	0	0	0	0	0	0	0 (0%)

6.1.2.2.3. Nominalized Transitive Verb Forms

Xhim produced nominalized transitive verb forms only with root transitive verbs in non-final position (Table 6.17). In this position Xhim produced four cases where the ergative morpheme and intransitivization were marked on a transitive verb and the conditioning contexts of nominalization were clear as shown in (19). The nominalization of the transitive verb *aq'* 'to give' in (19)a is conditioned by the adverb *wal*; while in (19)b, the nominalization of the transitive verb *il* 'to see' is conditioned by negation (*k'am*) and not by the intransitive verb *ul* 'to come'. In both cases, the nominalized transitive verb did not take aspect marking as expected from the adult grammar.

(19) a. wal **yahon** b'ay naq lucho. Xhim (2;8)
= wal y/aq'-on b'ay naq lucho
ADV E3s-give-INTR PRE CL lucho
'S/he is giving it to Lucho.'

b. aam jun winam ch'ul **ilon** naX. Xhim (2;8)
= k'am jun winaq ch-ø/'ul /il-on naq
NEG one man INC-A3s-come see-INTR PRO
'There is not that man who comes to see him.'

Table 6.17. Xhim's Nominal Root Transitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
-aspect	0	0	0	0	0	4	0	4 (57%)
stem	0	0	0	0	1	1	1	3 (43%)
root	0	0	0	0	0	0	0	0 (0%)

Although Xhim used the suffix *-on* with nominalized transitive verbs, in some cases the conditioning context was not clear as in (20). In (20)a we see a focused agent, where Dominga as the agent being focused should move to preverbal position. Xhim did not show this movement, but he still used the suffix *-on* on the transitive verb *man* 'to buy' as the effect of the focused agent.

(20) Nominalized transitive verbs in non-final position

a. **manon** tx'at jun dominga. — Xhim (2;7) — Agent Focus
= jun dominga /man-on tx'at
one Dominga buy-INTR bed
'Dominga bought a bed.'

b. **waloni** mam. — Xhim (2;8) — No condition
= w/al-on-!i *tol *a' mam
E1s-say-INTR-NOM COMP FOC mother
'I thought it was mother.'

c. **/jo-hon** el ixh hinmam. — Xhim (2;9) — No condition
= /jo-hon /el ix hin-mam
clean-INTR DIR CL E1s-mother
'My mother cleaned it.'

Xhim did not produce nominalized forms with derived transitive verbs in final position, but he did with root transitive verbs. In this position, he produced nominalized root transitive verbs as bare stems (Table 6.18). Although he did not use ergative prefixes to cross-reference the nominal transitive verb, he used the suffix *-on* to show intransitivization before nominalization (21). The few examples of nominalization as bare stem forms from Xhim's data show first that he produced transitive verbs without third person ergative *s*-before consonants as shown in (21)a and (21)b as it appears in the adult grammar. Second, he optionally produced the intransitivizer *-on*. In (21)a, the nominal transitive verb only has the nominalizing suffix *-i* and the intransitivizer

-on is missing, while in (21)b, he produced both suffixes *-on* and *-i*. Xhim also produced nominalized transitive verbs without a conditioning context (21)c.

(21) a. tay **teni**. Xhim (2;3) Bare root
= tay ø/ten-*on-i
then E3s-push-INTR-NOM
'Then, s/he pushed it.'

b. a minga **manoni**. Xhim (2;9) Bare stem
= a minga man-on-i
FOC minga buy-INTR-NOM
'It was Minga who bought it.'

c. **hatononi**. Xhim (2;9) -Aspect
=ha/ten-on-i
E2s-push-INTR-NOM
'You pushed it.'

Table 6.18. Xhim's Nominal Root Transitive Verb Forms: Tokens in Final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
-aspect	0	0	0	0	0	0	2	2 (22%)
stem	0	0	0	2	0	0	4	6 (78%)
root	1	0	0	0	0	0	0	0 (0%)

In non-final position, Xhim produced the contexts of dependent verb forms as illustrated in (22) and shown in Table 6.19. These were the only examples of dependent contexts that Xhim produced with root transitive verbs in final position.

(22) Non-final dependent verb forms
a. toX **wil** tit. Xhim (2;5) -Aspect, -absolutive
= /toj w-/il tit
go E1s-see car
'I will go see the car.'

b. toh **wil** haxhat. Xhim (2;5) -Aspect, -absolutive
= /toj w/il ha-sat
go E1s-see E2s-face
'I will go see your face.'

Table 6.19. Xhim's Dependent Root Transitive Verb Forms: Tokens in Non-final Position

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total
stem	0	0	0	0	0	0	0	0 (0%)
root	1	0	2	0	0	1	1	5 (100%)

6.1.2.2.4 Summary

Xhim produced imperative and indicative clauses when the recordings started. He produced more dependent clauses than Xhuw, but not nominalized clauses. In non-final (Table 6.20) and final (6.21) positions, he produced imperative transitive verbs as bare stems and bare roots. In both positions, he produced more transitive bare stems than transitive bare roots. As for indicative transitive verb forms, in non-final position (Table 6.20), he primarily produced entire verb forms, verb forms without aspect and absolutive markings, and verb roots, while in final position (Table 6.21) he mainly produced transitive verbs as entire forms, verb forms without an aspect and absolutive markings, and bare stems. In nominalized contexts in non-final and final positions, he produced transitive verbs that lack an aspect marking and bare stems. The bare stems in nominalized contexts include the use of the suffix *-on*. Only in non-final position did Xhim produce dependent transitive verbs as bare roots.

Table 6.20. Xhim's Transitive Verb Forms: Non-final Position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	18%	0%	0%
-aspect	0%	0%	57%	0%
-absolutive	0%	0%	0%	0%
-asp/abs	0%	57%	0%	0%
-erg	0%	2%	0%	0%
stem	65%	5%	43%	0%
root	35%	17%	0%	100%

Table 6.21. Xhim's Transitive Verb Forms: Final Position

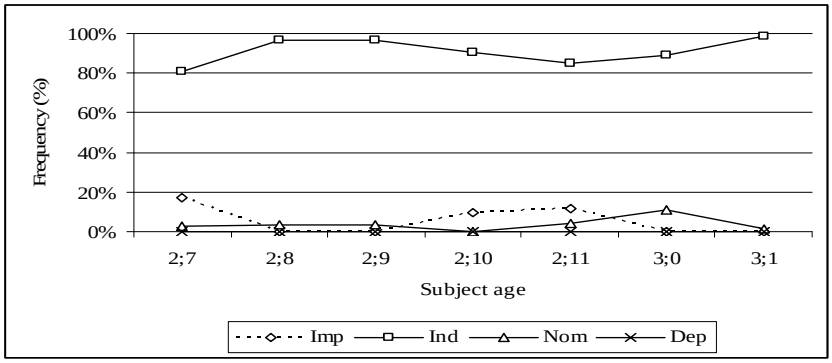
Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	20%	0%	0%
-aspect	0%	0%	22%	0%
-absolutive	0%	0%	0%	0%
-asp/abs	0%	65%	0%	0%
-erg	0%	0%	0%	0%
stem	94%	12%	78%	0%
root	6%	3%	0%	0%

6.1.3. Tum's Clause Types and Verb Forms

6.1.3.1. Tum's Clause Types

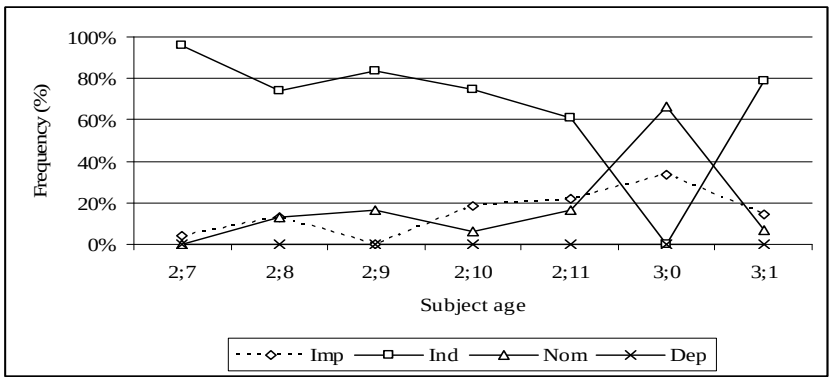
In non-final position (Figure 6.6) and final position (Figure 6.7) Tum produced a higher frequency of transitive verbs with indicative clauses followed by imperative and nominalized clauses. Tum did not produce dependent clauses in either position.

Figure 6.6. Tum's Transitive Clauses: Non-final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (298)
Imp	7	0	0	3	6	0	0	16 (5%)
Ind	33	53	26	29	45	8	80	274 (92%)
Nom	1	2	1	0	2	1	1	8 (3%)
Dep	0	0	0	0	0	0	0	0 (0%)

Figure 6.7. Tum's Transitive Clauses: Final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (113)
Imp	1	4	0	3	4	1	2	15 (13%)
Ind	24	23	5	12	11	0	11	86 (76%)
Nom	0	4	1	1	3	2	1	12 (11%)
Dep	0	0	0	0	0	0	0	0 (0%)

6.1.3.2. Tum's Verb Forms

6.1.3.2.1. Imperative Transitive Verb Forms

Tum produced bare stems at a lower frequency and most of her imperative forms appear as bare roots (23) in non-final position with root transitive verbs (Table 6.22) and in a few cases with derived transitive verbs (Table 6.23).

(23) a. **aktoj** ol kalo. Tum (2;7) Bare stem
= /aq'.aj-toq *y-ul karo
give.DIR-DIR E3s-RN car
'Put it in the car!'

b. **il** tomi a. Tum (2;7) Verb root
= /il tomi a
look Domi a
'Look at it Dominga, a!'

Table 6.22. Tum's Root Imperative Transitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
stem	0	2	0	0	0	0	0	2 (5%)
root	6	11	10	3	7	0	2	39 (95%)

Table 6.23. Tum's Derived Imperative Transitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
stem	0	2	1	0	2	0	1	6 (100%)
root	0	0	0	0	0	0	0	0 (0%)

Tum did not produce imperative verb roots with root transitive verbs in final position (Table 6.24), but she produced bare stems at a lower frequency compared to Xhuw and Xhim. With derived transitive verbs in the same positions, she produced bare stems only (24) 0(Table 6.25).

(24) 'e ta nine **makchej**. Tum (2;8)
= /el ta nena /maqche-j
fall COND baby close-IMP
'Baby, it may fall, close it.'

Table 6.24. Tum's Root Imperative Transitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
stem	0	0	0	0	0	1	0	1 (20%)
root	1	2	1	0	0	0	0	4 (80%)

Table 6.25. Tum's Derived Imperative Transitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
stem	0	2	1	0	4	1	1	9 (100%)
root	0	0	0	0	0	0	0	0 (0%)

6.1.3.2.2. Indicative Transitive Verb Forms

In non-final position (Figure 6.7), Tum produced 15% entire forms, 64% omission of aspect and absolutive morphemes, and 44% bare roots with root transitive verbs. Tum produced a higher percentage (44%) of transitive verbs with the omission of aspect and absolutive prefixes as shown in (25).

(25) **himich** hink'axh. Tum (2;7) Omission of aspect & absolutive
= *ch-ø-in/mitx' hin-k'ax
INC-A3s-E1s-hold E1s-stick
'I hold my stick.'

A few tokens of omission of the ergative prefix were found in Tum's data. In (26), she dropped the third person singular ergative *y*-. In non-final position, she produced 17% transitive bare roots and zero bare stems (Figure 6.11).

(26) himame minka **xi** wexh. Tum (2;7) Omission of ergative
= hin-mama minga x-ø-*y/i wex
E1s-mother minga COM-A3s-E3s-get pants
'My mother Minga got pants.'

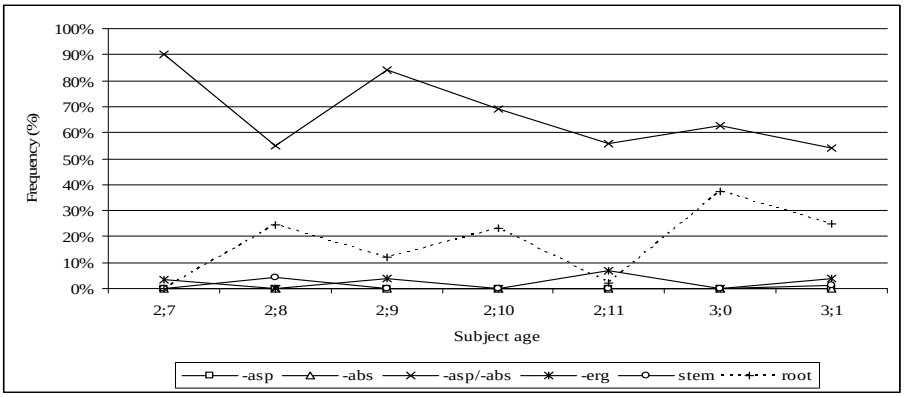
Tum also produced complete verb forms. She used complete verb forms with initial vowel transitive verbs and the ergative morpheme in second person singular (27)a as well as with consonant initial transitive verbs (27)b and with ergative morphemes different than the second person singular.

(27) Complete verb forms

a. **chal** b'ay naX tit naX. Tum (3;1)
= ch-ø-ø/al b'ay naq *ch-ø/tit naq
INC-A3s-E2s-say PRE PRO INC-A3s-come PRO
'Tell him to come.'

b. **kach'aj** mano. Tum (2;7)
= q-ø-a/tx'aj *ha-mano
POT-A3s-E2s-wash E2s-hand
'You will wash your hands.'

Figure 6.8. Tum's Root Transitive Verb Forms: Non-final Position



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
entire	2	8	0	2	15	0	12	39 (15%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/-abs	28	27	21	18	24	5	41	164 (64%)
-erg	1	0	1	0	3	0	3	8 (3%)
stem	0	2	0	0	0	0	1	3 (1%)
root	0	12	3	6	1	3	19	44 (17%)

In non-final position (Table 6.26), Tum produced 30% complete verb forms, 48% omission of aspect and absolutive and 9% root verb forms with derived transitive verbs.

Table 6.26. Tum's Derived Transitive Verb Forms: Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
entire	2	2	1	0	2	0	0	7 (30%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/-abs	1	3	0	2	1	0	4	11 (48%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	0	2	0	0	0	0	1	3 (13%)
root	0	0	0	1	1	0	0	2 (9%)

In final position (Table 6.27), Tum produced 21% entire verb forms with root transitive verbs. These complete verb forms appeared with both vowel initial transitive verbs (29)a and consonant initial transitive verbs (29)b. She produced 69% of verbs without aspect and absolutive (28), and 6% bare roots.

(28) hinte'ej **hinmaq'a'**. Tum (2;7) Aspect and ergative omission
= hin-te'-!ej *ch-ø-in/maq'-a'
E1s-stick-suf INC-A3s-E1s-hit-RTV
'It was my stick that I hit.'

(29) a. mampel **chonej**. Tum (2;7) Entire form
= maribel *tzet ch-ø-ø/one-j
maribel what INC-A3s-E2s-do-DTV
'Maribel what are you doing?'

b. aloxh **chinlo'**.
= arros ch-ø-in/lo'. Tum (3;1) Entire form
rice INC-A3s-E1s-eat
'Rice, I eat.'

In addition to the high frequency of transitive verbs that lack aspect and ergative morphemes and transitive verbs with complete forms, Tum produced bare roots in final position (30) (Table 6.27).

(30) lo'. Tum (2;9) Bare root
= *ch-ø-ø/lo'
INC-A3s-E3s-eat
'S/he/it eats it.'

Table 6.27. Tum's Indicative Transitive Verb Forms: Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
entire	0	3	1	4	2	0	7	17 (21%)
-asp	0	1	0	0	0	0	1	2 (2.5%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/-abs	20	17	3	4	9	0	2	55 (69%)
-erg	0	0	0	1	0	0	0	1 (1%)
stem	0	0	1	0	0	0	0	1 (1%)
root	0	2	0	1	0	0	1	4 (5%)

In final position (Table 6.28) Tum produced 40% as entire derived verb forms, 40% with omission of aspect and absolutive morphemes, and 20% as bare stems. She did not omit the suffix *-j*.

Table 6.28. Tum's Indicative Derived Transitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
entire	2	0	0	1	0	0	1	4 (40%)
-asp	0	0	0	0	0	0	0	0 (0%)
-abs	0	0	0	0	0	0	0	0 (0%)
-asp/-abs	1	0	1	2	0	0	0	4 (40%)
-erg	0	0	0	0	0	0	0	0 (0%)
stem	0	2	0	0	0	0	0	2 (20%)
root	0	0	0	0	0	0	0	0 (0%)

6.1.3.2.3. Tum's Nominalized Transitive Verb Forms

In non-final position (Table 6.29), Tum produced root transitive verbs as complete verb forms, bare stems and bare roots in nominalized contexts. She did not produce nominalized forms with derived transitive verbs in this position. In (31) there is a conditioning context for nominalization, but Tum produced only bare stems given that the ergative morpheme *s-* before consonants is optionally/or not used in the Q'anjob'al of Santa Eulalia. The only evidence that we have for the acquisition of nominalization is the intransitivization before nominalization. In (31)a the transitive verb *lo'* 'to eat' takes the derivational morpheme *-w* to become intransitive, while in (31)b the transitive verb *ch'ich* 'to comb' takes the derivational morpheme *-on* given that both nominalized transitive verbs are conditioned by *lanan* 'in progress.'

(31) Nominalized transitive verbs in non-final position

a. lan **low** hinkaxhlan. Tum (2;11)
= lan ø/lo-w hin-kaxhlan
PROG E3s-eat-INTR E1s-chicken
'My chicken is eating.'

b. lan **ch'ich'on** xhil. Tum (3;0)
= /lanan ø/ch'ich-on xil
PROG E3s-comb-INTR hair
'S/he is combing her/his hair.'

Table 6.29. Tum's Nominal Transitive Verb Forms: Tokens in Non-final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
-aspect	1	2	0	0	0	0	1	4 (50%)
stem	0	0	1	0	1	1	0	3 (38%)
root	0	0	0	0	1	0	0	1 (12%)

Tum also produced nominalized transitive verbs without a conditioning context as shown in (32). In this case, the nominalized transitive verb takes inflection of ergative, the suffix *-on* and the nominalizing suffix *-i*.

(32) **hintenoni** xhi ka la. Tum (2;8) No condition
= hin/ten-on-!i /xhi kaq la
E1s-touch-DER-NOM say like that
'I touched it, s/he said like that.'

In (33) although Tum produced a bare root, it is clear that the verb appears in a clear conditioning context for nominalization. The focus on Juana requires the suffix *-on* with the transitive verb *man* 'to buy', but Tum did not produce this suffix.

(33) wana a' **man** 'atliya. Tum (2;11)
= wana a /man-*on atliya
Juana it is buy-INTR atliya
'It is Juana who bought atliya.'

In final position (Table 6.30) Tum produced only root transitive verbs as bare stem forms in nominalized contexts. Some of these nominalized transitive verbs appeared without a conditioning context as shown in (34)a. Tum produced (34)b after being asked by one of the Q'anjob'al investigator's the question *b'aytal xtita?* 'Where did it come from/where did you get it?' The data in (34)b show that Tum might be misplacing the ergative *hin-* instead of the absolutive *-in* to express a dative recipient. Tum did not produce dependent transitive verbs in non-final and final positions.

(34) a. **ch'a'ni**. Tum (2;8) Complete form
= ch-ø-ø/'aq'-on-i
INC-A3s-E3s-give-INTR-NOM
'S/he gives it.'

b. um papa **hinmanoni**. Tum (2;9) -Aspect
= jun papa !hin/man-on-i
one father E1s-buy-INTR-NOM
'My father bought it.'

c. **manni**. Tum (2;8) Bare stems
= /man-on-i
buy-INTR-NOM
'S/he bought it.'

d. naX, un tiha **ahoni**. Tum (2;10) -Aspect
= naq jun tiya *x-ø-ø/a'-on-i
CL one ant COM-A3s-E3s-give-INTR-NOM
'He, my ant gave it.'

Table 6.30. Tum's Nominalized Transitive Verb Forms: Tokens in Final Position

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total
-aspect	0	2	1	0	2	1	0	6 (54%)
stem	0	2	0	1	0	1	1	5 (46%)
root	0	0	0	0	0	0	0	0 (0%)

6.1.3.2.4. Summary

Tum produced more indicative and imperative clauses than nominalized clauses. She did not produce dependent clauses. She produced transitive imperatives as bare stems and bare roots in both non-final (Table 6.36) and final (Table 6.37) positions. In indicative context, in both non-final and final positions, she produced transitive verbs as entire forms and transitive verbs that lack aspect and absolutive markings. In contrast to Xhuw and Xhim, she produced fewer bare stems, but she still produced bare roots in non-final position. The absence of bare stems in non-final position suggests that Tum did not overextend the status suffix to non-final position. In nominalized contexts, in non-final and final positions, she produced transitive verbs that lack

aspect and as bare stem forms. The focus of Juana requires the suffix *-on* with the transitive verb *man* 'to buy'. This suggests that the suffix *-on* for focus in Q'anjob'al may not be fully acquired (Mateo Pedro, 2010). This would explain why Tum produced a bare root although she used some complete verb forms without conditioning contexts and bare stems with clear conditioning contexts. Once again, she did not produce transitive verbs in dependent contexts. Table 6.31 and Table 6.32 show that Tum had acquired three verb forms, -aspect, -aspect/absolutive, and bare stems.

(35) wana a' **man** 'atliya. Tum (2;11)
= wana a /man-*on atliya
Juana it is buy-INTR atliya
'It is Juana who bought atliya.'

Table 6.31. Tum's Transitive Verb Forms: Tokens in Non-final Position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	16%	0%	0%
-aspect	0%	0%	50%	0%
-absolutive	0%	0%	0%	0%
-asp/abs	0%	62%	0%	0%
-erg	0%	3%	0%	0%
stem	17%	2%	38%	0%
root	83%	16%	13%	0%

Table 6.32. Tum's Transitive Verb Forms: Tokens in Final Position

Verb Forms	Imperative	Indicative	Nominalized	Dependent
entire	0%	24%	0%	0%
-aspect	0%	2%	55%	0%
-absolutive	0%	2%	0%	0%
-asp/abs	0%	67%	0%	0%
-erg	0%	1%	0%	0%
stem	71%	3%	45%	0%
root	29%	0%	0%	0%

6.2. Frequency Analysis

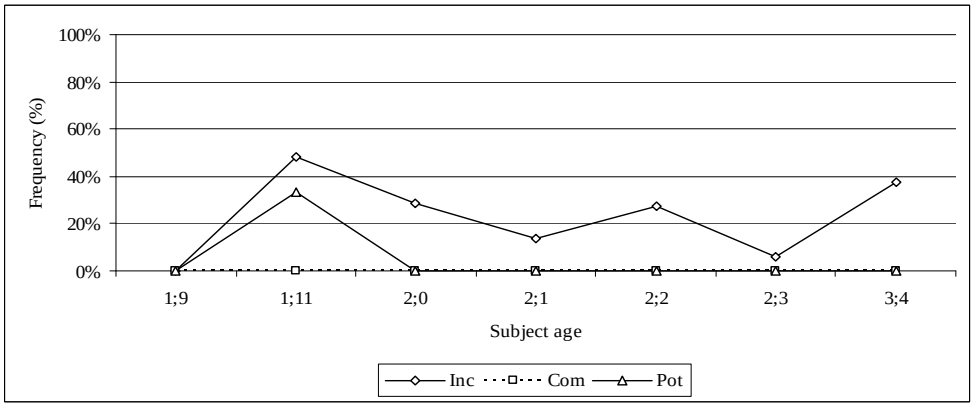
In this section I present the frequency of the inflectional morphemes (aspect, ergative, and status suffixes) that each child produced on transitive verbs. For this analysis I followed the frequency analysis described in chapter 4 and also applied with intransitive verbs in chapter 5. Given the fact that the absolutive morpheme is a zero morpheme and that most of the objects of the children's transitive verbs were third person singular absolutive I leave the analysis of this morpheme for future research.

6.2.1. Aspect

6.2.1.1. Xhuw's Aspect

Xhuw produced a higher frequency of incompletive aspect markers than completive and potential aspect markers. However, the dominance of incompletive aspect does not mean that Xhuw produced a morphological realization of this aspect morpheme in every context (Figure 6.19). She marked incompletive aspect in 8 of 28 contexts at 2;0, but in only 2 of 34 contexts at 2;3. She did not mark aspect consistently even at 3;4. According to the frequency criterion, Xhuw had not acquired grammatical aspect on transitive verbs.

Figure 6.9. Xhuw's Aspect Markers on Transitive Verbs

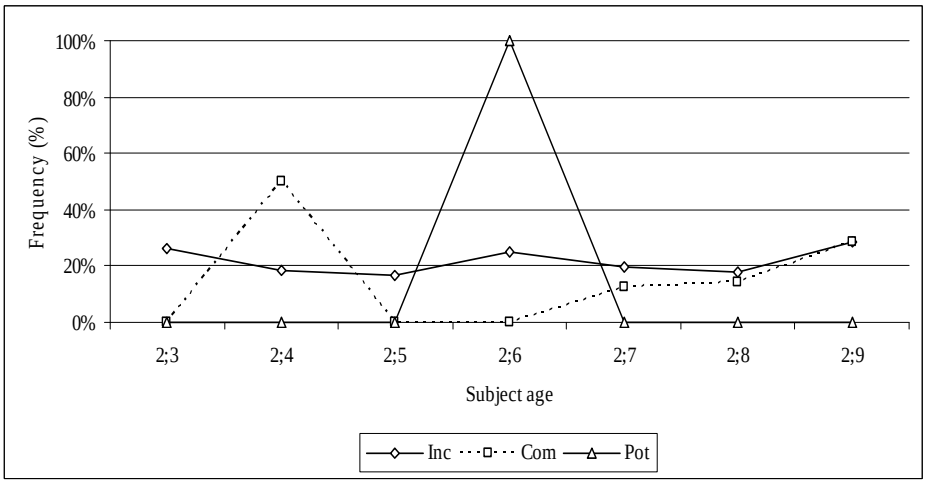


	1;9	1;11	2;0	2;1	2;2	2;3	3;4	Average %
Inc	0/0	14/29	8/28	7/51	3/11	2/34	3/8	37/161 (23%)
Com	0/0	0/2	0/0	0/6	0/1	0/0	0/4	0/13 (0%)
Pot	0/0	1/3	0/0	0/1	0/0	0/7	0/1	1/5 (20%)

6.2.1.2. Xhim's Aspect

Figure 6.10 shows the frequency of aspect contexts produced by Xhim. Xhim also produced many incompletive aspect contexts in contrast to completive and potential aspect contexts. Although he produced many contexts for the incompletive aspect, he did not produce this aspect marker very frequently with transitive verbs as with Xhim's data. The frequency criterion suggests that Xhim has not acquired the aspect prefixes by the age of 2;9.

Figure 6.10. Xhim's Aspect Markers on Transitive Verbs

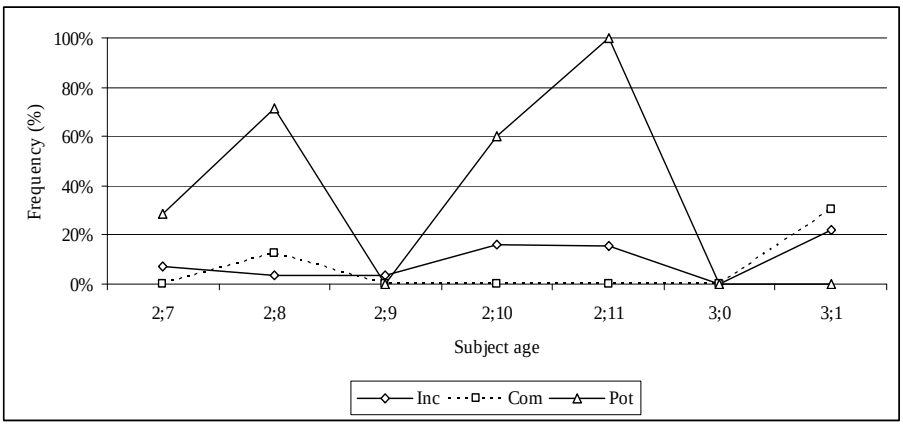


	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
Inc	5/19	11/59	5/30	6/24	7/36	17/96	16/56	67/320 (21%)
Com	0/0	2/4	0/0	0/0	1/8	1/7	2/7	6/26 (23%)
Pot	0/0	0/9	0/0	1/1	0/1	0/9	0/2	1/22 (4%)

6.2.1.3. Tum's Aspect

Tum produced more incompletive aspect contexts than completive and potential aspect contexts. Although Tum is older than Xhuw and Xhim, she still omitted the aspect markers. She started to produce overt forms of the potential aspect and a few overt forms of the completive aspect. Her aspect remains low even at the age of 3;1. Like Xhuw and Xhim, she did not display a productive system of aspect marking.

Figure 6.11. Tum's Aspect Markers on Transitive Verbs



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
Inc	4/54	2/53	1/27	6/37	7/46	0/8	12/55	32/280 (11%)
Com	0/1	1/8	0/2	0/1	0/2	0/0	7/23	8/44 (18%)
Pot	2/7	10/14	0/3	3/5	12/12	0/0	0/13	27/54 (50%)

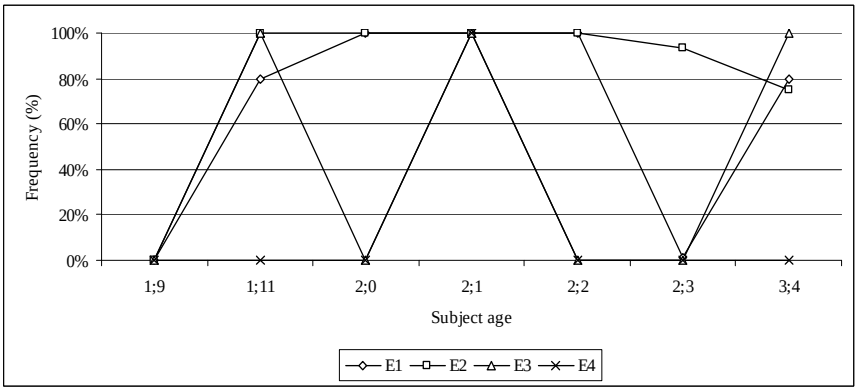
6.2.2. Ergative Morphemes

The children's ergative morphemes are divided into vowel initial and consonant initial transitive verbs. I explore the acquisition of ergative morphemes in indicative and nominalized contexts.

6.2.2.1. Xhuw's Ergative Morphemes

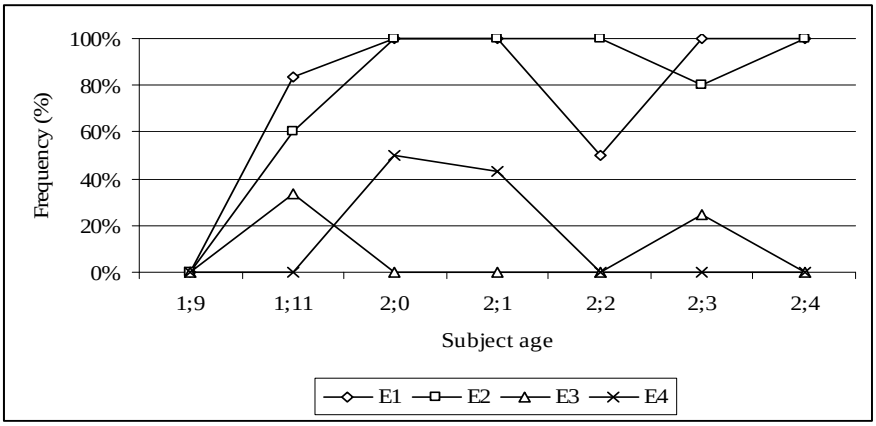
Xhuw's ergative morpheme use with vowel initial transitive verbs are shown in Figure 6.12, while her ergative morpheme use with consonant initial transitive verbs are shown in Figure 6.13. Xhuw produced ergative morphemes equally with vowel-initial and consonant-initial transitive verbs. The frequency analysis shows that Xhuw produced the first and second person ergative markers by the age of 1;11. Thus, at age 2;0 Xhuw lacked aspect marking, but had already acquired the ergative prefixes.

Figure 6.12. Xhuw's Ergative Morpheme Contexts: Vowel Initial TVs



	1;9	1;11	2;0	2;1	2;2	2;3	3;4	Average %
E1	0/0	4/5	2/2	7/7	2/2	12/12	4/5	31/33 (94%)
E2	0/0	15/15	7/7	6/6	3/3	14/15	3/4	48/50 (96%)
E3	0/0	1/1	0/0	1/1	0/1	0/0	1/1	4/4 (100%)
E4	0/0	0/0	0/0	1/1	0/0	0/0	0/0	1/1 (100%)

Figure 6.13. Xhuw's Ergative Morpheme Contexts: Consonant-initial TVs



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Average %
E1	0/0	5/6	6/6	1/1	1/2	1/1	2/2	16/18 (89%)
E2	0/0	3/5	7/7	23/23	2/2	4/5	2/2	41/44 (93%)
E3	0/0	1/3	0/4	0/12	0/2	2/8	0/0	3/29 (10%)
E4	0/0	0/0	1/2	3/7	0/0	0/0	0/0	4/9 (44%)

In nominalized contexts (Table 6.33), Xhuw produced ergative contexts with consonant initial transitive verbs in final position with the third person singular, which is a zero morpheme in Q'anjob'al. Therefore, there is no evidence for Xhuw's extension of ergative marking to transitive verbs in nominalized contexts.

Table 6.33. Xhuw's Ergative Morpheme Contexts: Nominalized Contexts

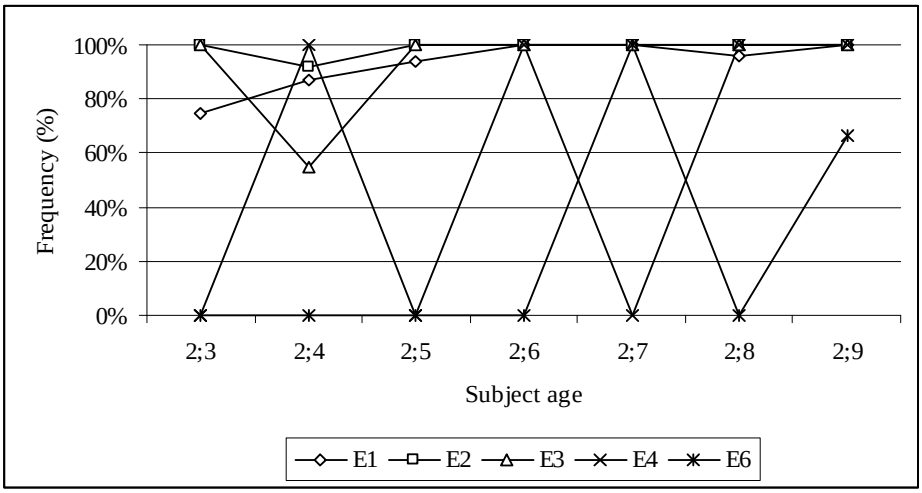
	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Average %
E1	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
E2	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
E3	0/0	0/0	1/3	0/2	0/0	1/1	0/1	2/7 (29%)

6.2.2.2. Xhim's Ergative Morphemes

Xhim's ergative morpheme use is shown in Figures 6.14 (vowel initial transitive verbs) and 6.15 (consonant initial transitive verbs). Xhim produced the first, second, and third person singular ergative markers with vowel-initial transitive verbs at a similar frequency. He produced the first person ergative prefixes at a lower frequency with consonant-initial verbs. He did not use the other ergative forms very frequently with consonant-initial verbs.

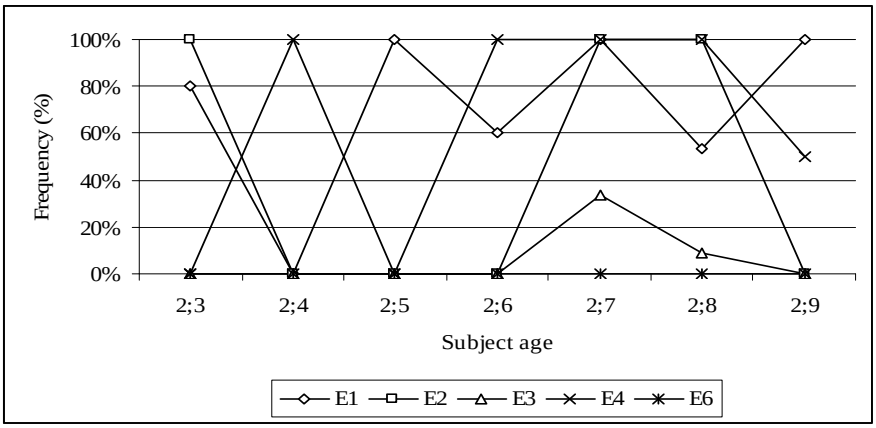
With vowel initial and consonant initial transitive verbs, Xhim produced ergative morphemes with all persons as overt forms, even when both aspect and absolutive morphemes were missing on the verb. Xhim also produced the ergative prefixes at high rates in their obligatory contexts. The frequency analysis shows that Xhim has acquired the ergative morphemes for vowel initial verbs.

Figure 6.14. Xhim's Ergative Morphemes with Vowel Initial TVs



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
E1	3/4	20/23	15/16	10/10	10/10	45/47	11/11	114/121 (94%)
E2	2/2	11/12	7/7	5/5	6/6	6/6	17/17	55/55 (100%)
E3	1/1	6/11	4/4	1/1	6/6	14/14	12/12	44/49 (90%)
E4	0/0	5/5	0/0	1/1	0/0	9/9	2/2	17/17 (100%)
E6	0/0	0/0	0/0	0/0	3/3	0/0	2/3	5/6 (83%)

Figure 6.15. Xhim's Ergative Morphemes with Consonant Initial TVs



	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
E1	4/5	0/6	2/2	3/5	5/5	8/15	9/9	31/47 (66%)
E2	1/1	0/2	0/0	0/0	1/1	3/3	0/0	5/7 (71%)
E3	0/6	0/11	0/1	0/2	2/6	1/11	0/7	3/44 (.07%)
E4	0/0	2/2	0/0	1/1	4/4	6/6	1/2	12/15 (80%)
E6	0/0	0/0	0/0	0/0	0/4	0/0	0/1	0/5 (0%)

Xhim produced only a few ergative morphemes in nominalized contexts as in Table 6.34.

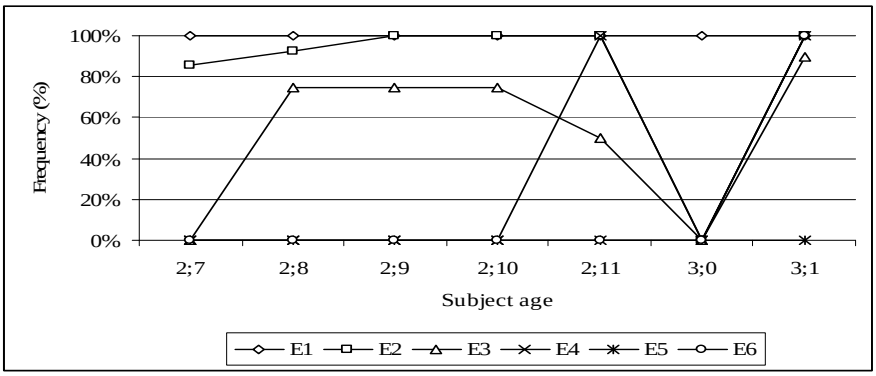
Table 6.34. Xhim's Ergative Prefixes in Nominalized Contexts

	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Average %
E1	0/0	0/0	0/0	0/0	0/0	4/4	0/0	4/4 (100%)
E2	0/0	0/0	0/0	0/0	0/0	1/1	2/2	3/3 (100%)
E3	0/1	0/0	0/0	0/3	0/1	0/2	0/1	0/9 (0%)
E4	0/0	0/0	0/0	0/0	0/0	0/0	1/1	1/1 (100%)

6.2.2.3. Tum's Ergative Morphemes

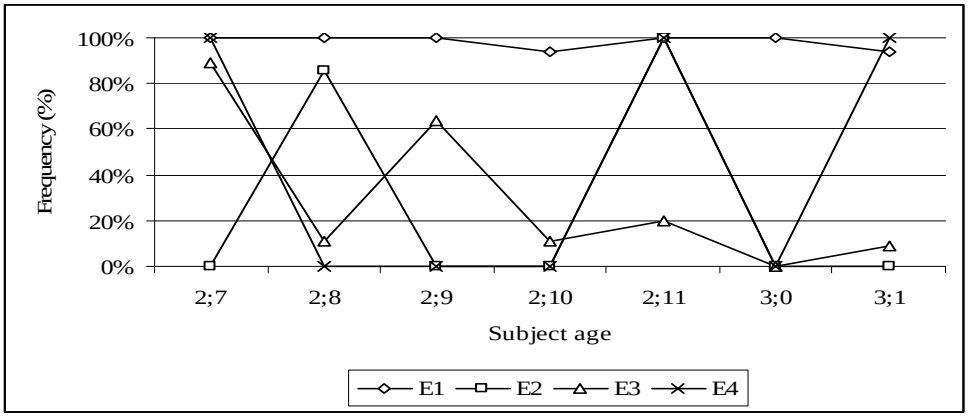
Tum's ergative morpheme use with vowel-initial transitive verbs is shown in Figure 6.16 while her ergative morpheme use with consonant-initial transitive verbs is shown Figure 6.17. She produced the ergative morphemes overtly in the majority of first and second person contexts. Like Xhuw and Xhim, the frequency analysis shows that Tum exhibited a productive use of the ergative prefixes on both vowel-initial and consonant-initial transitive verbs in contrast to the omission of aspect marking.

Figure 6.16. Tum's Ergative Contexts with Vowel Initial TVs



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
E1	9/9	9/9	8/8	8/8	5/5	3/3	20/20	62/62 (100%)
E2	6/7	12/13	2/2	1/1	3/3	0/0	2/2	26/28 (93%)
E3	0/1	6/8	4/6	6/8	3/6	0/0	9/10	11/39 (28%)
E4	0/0	0/0	0/0	0/0	2/2	0/0	2/2	4/4 (100%
E5	0/0	0/0	0/0	0/0	0/0	0/0	0/1	0/1 (0%)
E6	0/0	0/0	0/0	0/0	0/0	0/0	1/1	1/1 (100%)

Figure 6.17. Tum's Ergative Morphemes with Consonant Initial TVs



	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
E1	31/31	26/26	5/5	16/17	24/24	2/2	15/16	119/121 (98%)
E2	0/3	6/7	0/0	0/0	12/12	0/0	0/0	18/22 (82%)
E3	8/9	2/18	7/11	1/9	1/5	0/2	2/23	21/77 (27%)
E4	1/1	0/1	0/0	0/0	2/2	0/0	12/12	15/16 (94%)
E5	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
E6	0/0	0/0	0/0	0/0	0/0	0/1	0/1	0/2 (0%)

Like Xhim, Tum produced a few ergative morphemes with vowel-initial transitive verbs (Table 6.35) and consonant-initial transitive verbs (Table 6.36) in nominalized contexts. There is insufficient data to determine Tum's use of ergative marking for nominalized transitive verbs.

Table 6.35. Tum's Vowel Initial Ergative Contexts in Nominalized Contexts

	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
E1	0/0	0/0	0/0	0/0	3/3	1/1	1/1	5/5 (100%)
E2	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
E3	2/2	0/0	0/1	0/1	0/0	0/0	1/1	3/5 (60%)

Table 6.36. Tum's Consonant Initial Ergative Contexts in Nominalized Contexts

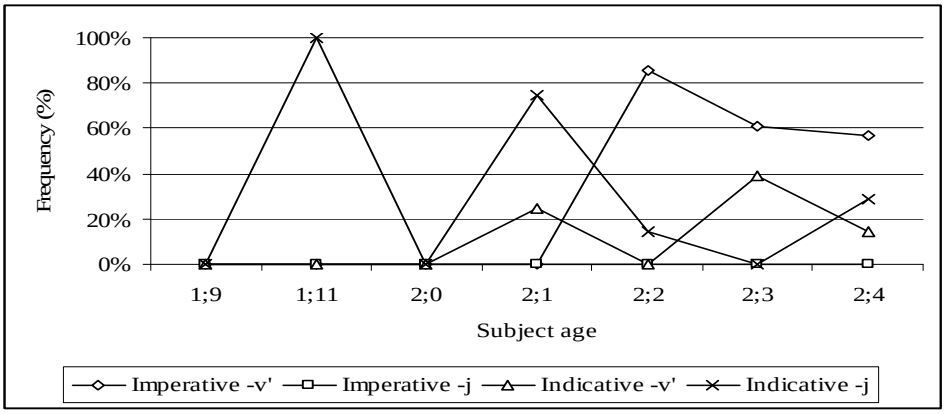
	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Average %
E1	1/1	1/1	0/0	0/0	0/0	0/0	0/0	2/2 (100%)
E2	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
E3	0/0	0/2	0/1	0/0	2/4	0/0	1/1	3/8 (38%)
E4	0/0	0/0	0/0	0/0	0/0	0/0	1/1	1/1 (100%)

6.2.3. Suffixes

6.2.3.1. Xhuw's Suffixes

Recall that the status suffix *-v'* has three main functions: imperative, indicative, and dependent. It remains only in final position in all three contexts. In this case, the suffix *-v'* acting as an imperative suffix gets deleted in non-final position in contrast to the imperative suffix *-an* for intransitive verbs, which remains in non-final position. In contrast, the indicative suffix *-j* for derived transitive verbs appears in both non-final and final positions. Xhuw's status suffixes that appeared in non-final position are shown in Figure 6.18. With root transitive verbs she produced 57% of the status suffix *-v'* as imperative and 23% of it as indicative; while with derived transitive verbs she produced 21% of the status suffix *-j*.

Figure 6.18. Xhuw's Status Suffixes in Non-final Position

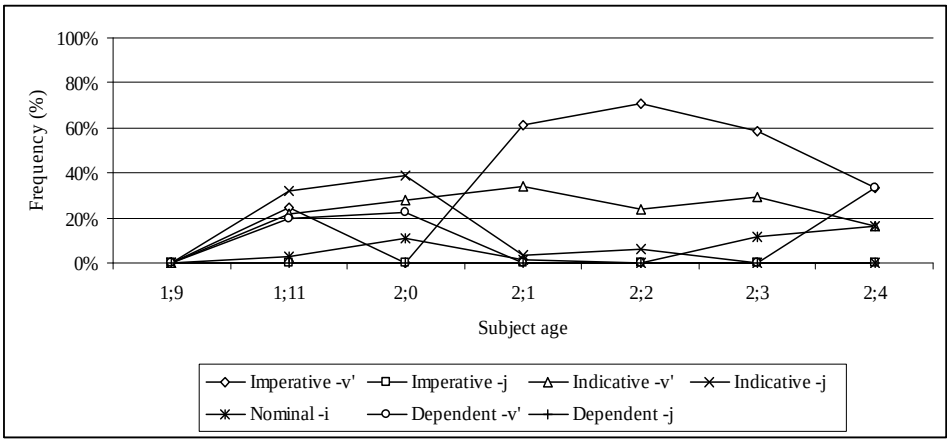


Non-final	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (53)
Imperative *-v'*	1;9	1;11	2;0	2;1	2;2	2;3	2;4	30 (57%
Imperative *-j*	0/0	0/2	0/0	0/10	12/12	14/14	4/4	0 (0%)
Indicative *-v'*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	12 (23%)
Indicative *-j*	0/0	0/1	0/10	2/22	0/3	9/23	1/6	11 (21%)

Xhuw's status suffixes that appeared in final position are shown in Figure 6.19. She produced 45% of the status suffix *-v'* as imperative, 28% as indicative, and 9% as dependent. In contrast,

she produced 14% of the status suffix *-j* as indicative only; and 4% of the suffix *-i* with nominalized transitive verbs.

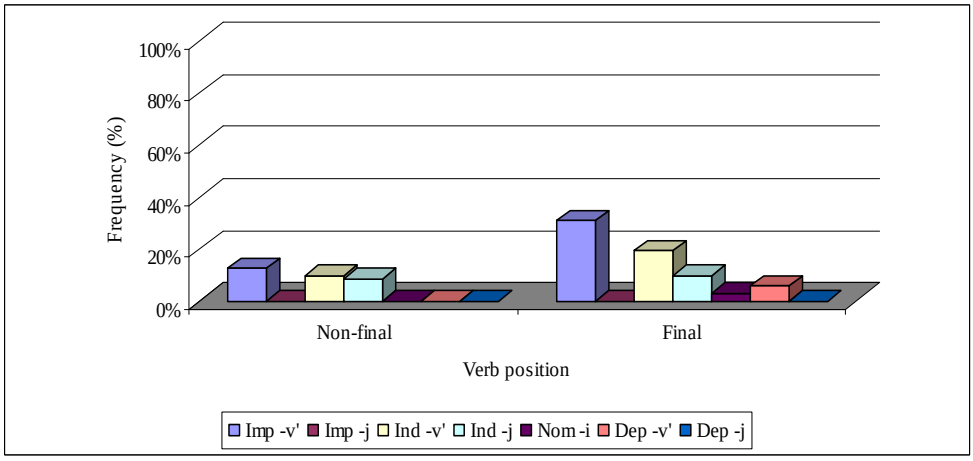
Figure 6.19. Xhuw's Status Suffixes in Final Position



	1;9	1;11	2;0	2;1	2;2	2;3	2;4	Total (53)
Imperative *-v'*	0/0	0/2	0/0	0/10	12/12	14/14	4/4	74 (45%)
Imperative *-j*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)
Indicative *-v'*	0/0	7/7	4/4	22/27	4/5	5/7	1/1	46 (28%)
Indicative *-j*	0/0	13/13	7/7	2/2	1/1	0/0	0/0	23 (14%)
Nominal *-i*	0/0	1/1	2/2	1/1	0/0	1/1	1/1	7 (4%)
Dependent *-v'*	0/1	8/8	4/4	0/2	0/0	0/0	2/2	14 (9%)
Dependent *-j*	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0 (0%)

A comparison of the distribution of Xhuw's status suffixes with transitive verbs in non-final and final positions are shown in Figure 6.20. In both non-final and final positions she produced the status suffix *-v'* in imperative and indicative contexts. Only in final position she produced the status suffix *-v'* as dependent. She produced the status suffix *-j* in both positions, but only as indicative.

Figure 6.20. Xhuw's Distribution of Status Suffixes in Non-final and Final Positions

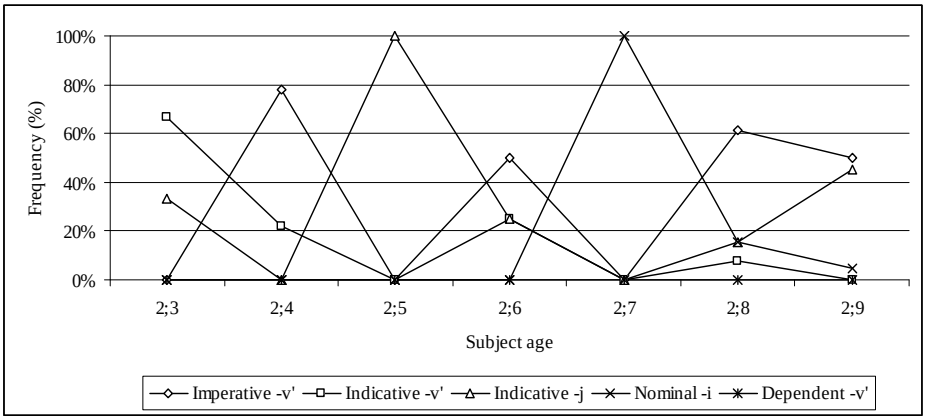


	Imp *-v'*	Imp *-j*	Ind *-v'*	Ind *-j*	Nom *-i*	Dep *-v'*	Dep *-j*
Non-final	13%	0%	10%	9%	0%	0%	0%
Final	31%	0%	19%	10%	3%	6%	0%
Total	44%	0%	29%	19%	3%	6%	0%

6.2.3.2. Xhim's Suffixes

Xhim's status suffixes with transitive verbs in non-final position are shown in 6.21. He produced the status suffix *-v'* in imperative (57%) and indicative (12%) contexts. He also produced the status suffix *-j* with derived transitive verbs in indicative context (23%) and the suffix *-i* in nominal contexts (8%). In this position he produced the suffix *-on* that is required before nominalization.

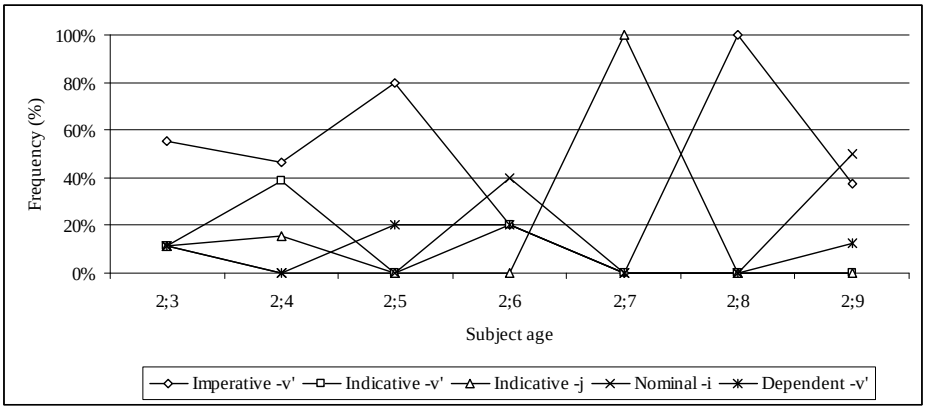
Figure 6.21. Xhim's Status Suffixes with Transitive Verbs in Non-final Position



Non-final	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (75)
Imperative *-v'*	0/1	14/19	0/2	2/2	0/0	16/28	11/13	43 (57%)
Indicative *-v'*	2/3	4/16	0/1	1/2	0/6	2/12	0/11	9 (12%)
Indicative *-j*	1/1	0/0	1/1	1/1	0/0	4/4	10/10	17 (23%)
Nominal *-i*	0/0	0/0	0/0	0/0	1/1	4/4	1/1	6 (8%)
Dependent *-v'*	0/1	0/0	0/2	0/0	0/0	0/1	0/1	0 (0%)

Xhim's status suffixes with transitive verbs in final position are shown in Figure 6.22. In this position, he produced the status suffix *-v'* in imperative (54%), indicative (13%), and dependent (8%) contexts. He produced the status suffix *-j* with derived transitive verbs, but only in indicative context. He also produced the nominalized suffix *-i* that comes after the suffix *-on*.

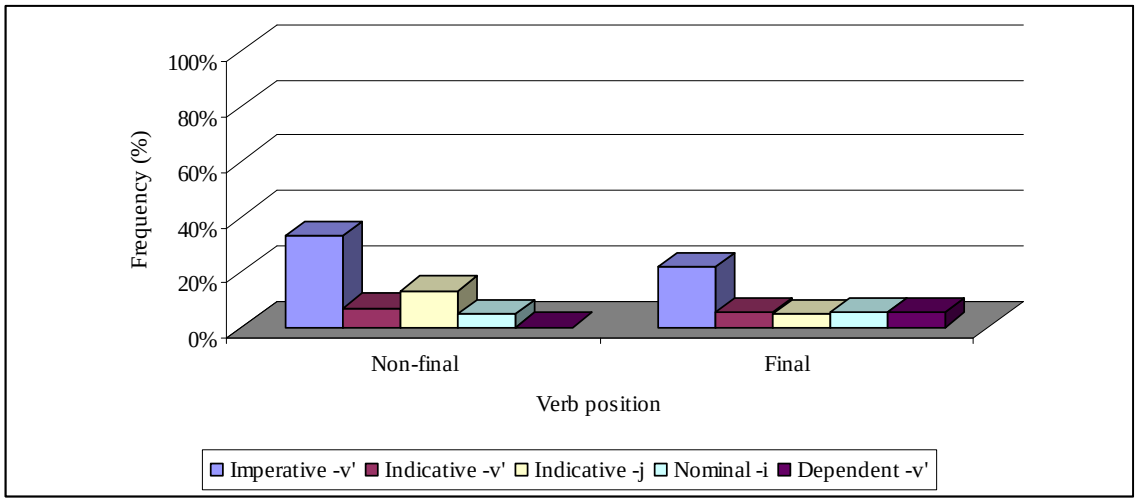
Figure 6.22. Xhim's Status Suffixes with Transitive Verbs in Final Position



Final	2;3	2;4	2;5	2;6	2;7	2;8	2;9	Total (52)
Imperative *-v'*	5/8	6/6	4/4	1/1	0/0	9/10	3/3	28 (54%)
Indicative *-v'*	1/1	5/6	0/0	1/1	0/0	0/0	0/0	7 (13%)
Indicative *-j*	1/1	2/2	0/0	0/0	3/3	0/0	0/0	6 (12%)
Nominal *-i*	1/1	0/0	0/0	2/2	0/0	0/0	4/4	7 (13%)
Dependent *-v'*	1/1	0/0	1/1	1/1	0/0	0/0	1/1	4 (8%)

The frequency analysis shows that Xhim acquired the status suffix *-v'* only as imperative at 2;4, but not the other status suffixes (Figures 6.21 & 6.22). A comparison of Xhim's status suffixes for transitive verbs in non-final and final positions are shown in Figure 6.23. He produced the status suffix *-v'* as imperative and indicative in both non-final and final positions. In final position he produced the same suffix (*-v'*) in dependent context. He also produced the status suffix *-j* for derived transitive verbs and the nominalizing suffix *-i* in both non-final and final positions.

Figure 6.23. Xhim's Status Suffixes with Transitive Verbs in Non-final and Final Positions

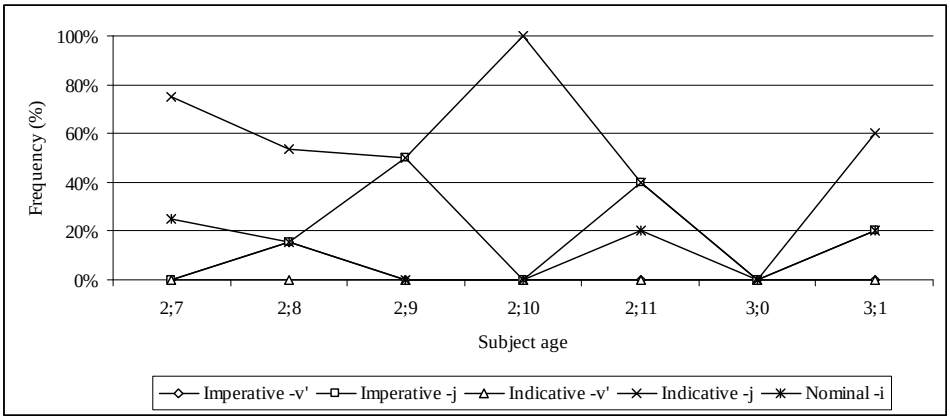


Position	Imperative *-v'*	Indicative *-v'*	Indicative *-j*	Nominal *-i*	Dependent *-v'*
Non-final	33%	7%	13%	5%	0%
Final	22%	5%	5%	5%	5%
Total 130	55%	12%	18%	10%	5%

6.2.3.3. Tum's Suffixes

Tum's status suffixes with transitive verbs in non-final position are shown in Figure 6.24. She produced 6% of the status suffix *-v'* in imperative context only. In contrast, she produced the suffix *-j* with derived transitive verbs in imperative (19%) and indicative (59%) contexts and 16% of the status suffix *-i* in nominalized contexts.

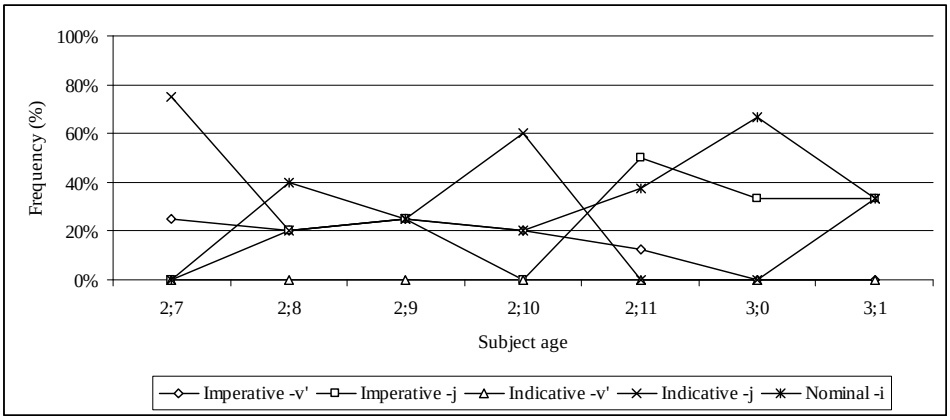
Figure 6.24. Tum's Status Suffixes with Transitive Verbs in Non-final Position



Non-final	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (32)
Imperative *-v'*	0/6	2/13	0/10	0/3	0/7	0/0	0/2	2 (6%)
Imperative *-j*	0/0	2/2	1/1	0/0	2/2	0/0	1/1	6 (19%)
Indicative *-v'*	0/0	0/13	0/3	0/7	0/0	0/3	0/20	0 (0%)
Indicative *-j*	3/3	7/7	1/1	3/3	2/2	0/0	3/3	19 (59%)
Nominal *-i*	1/1	2/2	0/1	0/0	1/2	0/1	1/1	5 (16%)

Tum's status suffixes in final position are shown in Figure 6.25. As in non-final position, she produced the status suffix *-v'* in imperative context (16%) but not in indicative context. She produced the status suffix *-j* in both in imperative (24%) and indicative (27%) contexts. She also produced the status suffix *-i* in nominalized contexts (32%).

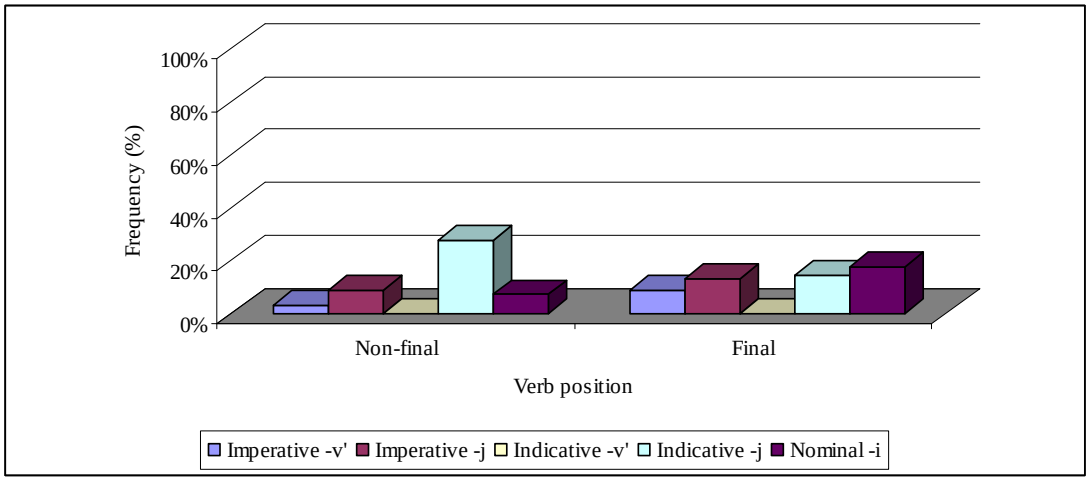
Figure 6.25. Tum's Status Suffixes with Transitive Verbs in Final Position



Final	2;7	2;8	2;9	2;10	2;11	3;0	3;1	Total (37)
Imperative *-v'*	1/1	2/2	1/1	1/1	1/1	0/0	0/0	6 (16%)
Imperative *-j*	0/0	2/2	1/1	0/0	4/4	1/1	1/1	9 (24%)
Indicative *-v'*	0/0	0/2	0/1	0/1	0/0	0/0	0/1	0 (0%)
Indicative *-j*	3/3	2/2	1/1	3/3	0/0	0/0	1/1	10 (27%)
Nominal *-i*	0/0	4/4	1/1	1/1	3/3	2/2	1/1	12 (32%)

Based on the frequency analysis, Figures 6.24 and 6.25 show that Tum acquired only the status suffix *-j* at 2;7, but not the other status suffixes given that they appeared in less than 75%. A comparison of Tum's transitive status suffixes in non-final and final positions are shown in Figure 6.26. She produced the status suffix *-v'* in imperative context in non-final and final positions, but not in indicative context. In contrast, she produced the status suffix *-j* to mark imperative and indicative contexts in both positions. She also produced the nominalizing suffix *-i* in both positions. Tum did not produce the status suffix for dependent contexts.

Figure 6.26. Tum's Status Suffixes with Transitive Verbs in Non-final and Final Positions



Position	Imperative -v'	Imperative -j	Indicative -v'	Indicative -j	Nominal -i
Non-final	3%	9%	0%	28%	7%
Final	9%	13%	0%	14%	17%
Total (69)	12%	22%	0%	42%	25%

6.2.4. Summary

Xhuw and Xhim produced about 90% of their transitive verbs in incompletive contexts and only a few instances of transitive verbs in completive and potential contexts. In contrast, Tum produced about 70% of her transitive verbs in incompletive contexts and produced more transitive verbs in completive and potential contexts. The high frequency of the incompletive contexts does not mean that the incompletive aspect marker is realized overtly. The three children lack aspect marking on their verbs until the age of 2;9. Based on the frequency analysis I conclude that children acquiring Q'anjob'al do not produce aspect prefixes in their obligatory contexts before 3;0.

The children produced first and second person ergative morphemes in indicative contexts. The frequency analysis suggests that the three children acquired the ergative prefixes at 1;11. There were few uses of ergative morphemes in nominalized contexts.

Although these children produced the status suffix *-v'/-j* to mark imperative, indicative, and dependent contexts and the status suffix *-i* to mark nominalization, the frequency analysis shows that they have not mastered them all yet. For example Xhuw acquired the status suffix *-j* for indicative context at 1;11 and the imperative suffix *-v'* at 2;2. Xhim acquired only the imperative suffix *-v'* at 2;4 and Tum acquired the indicative suffix *-j* at 2;7. Table 6.37 provides a summary of the transitive verb inflection that the three children have mastered based on the frequency analysis.

Table 6.37. Mastery of Transitive Verb Inflection

Child	Aspect	Ergative	Status
Xhuw	-	E1/E2/E3 (1;11) E4 (2;1)	Ind *-j* (1;11) Imp *-v'* (2;2)
Xhim	-	E1/E2/E3 (2;3)	Imp *-v'* (2;4)
Tum	pot (2;8/2;11)	E1/E2 (2;7) E3 (2;8)	Ind *-j* (2;7)

6.3. Productivity

Although Q'anjob'al children have difficulty producing the inflectional prefixes in obligatory contexts, in this section I show that they use inflection on transitive verbs with productivity. Once again, I follow Gathercole, et. al., (1999) to evaluate the productivity of the verb inflection in Q'anjob'al.

For the productivity of aspect I counted only overt forms (entire forms). In this analysis I included minus aspect for nominalized contexts given that the verb takes only ergative agreement and not aspect marking. For person, I counted the entire and minus aspect/absolutive forms. Given that it was harder to find productivity of use within each single age, I looked for productivity across the ages of each child. The good thing about this analysis is that if one cannot find a verb used in indicative contexts at a certain age, one can find that verb in the next age and

in a different context. This pattern of productivity is different from what a piece meal pattern of acquisition would suggest (Tomasello, 2003), in the sense that one should expect the same verb form across ages. Furthermore, one should find the same verb form in the four clause types. As Gathercole, et. al (1999) found for verb inflection in Spanish, in Q'anjob'al the three children's verb inflections did not all show productivity. We find a higher frequency of incompletive contexts, but a low frequency of overt forms.

6.3.1 Productivity of Aspect

Xhuw's transitive verbs appeared with the incompletive aspect, which does not show contrast with the completive or potential aspects. Only Xhim and Tum showed contrast for aspect marking, even though Xhim showed more contrasts than Tum as illustrated in Table 6.38. Xhim's transitive verbs appeared mostly with incompletive aspect, but he showed contrast of aspect making for the transitive verbs *il* 'to see', *i'* 'to take, have', and *aq'* 'to give'. At 2;4 he showed contrast marking of incompletive and completive aspects with the transitive verb *il* 'to see'. At 2;8 he showed another contrast of aspect marking (incompletive and potential) with the same verb. At age 2;9 he showed a contrast of the completive and the potential aspects with the transitive verb *i'* to take, have'. In contrast, Tum produced different transitive verbs with incompletive and potential aspects, but she did not show contrast between these aspects on the same verbs. At 3;1 she showed a contrast between the incompletive and completive aspects with the transitive verbs *chi'* 'to bite'.

Table 6.38. Xhim and Tum's Contrast Aspect Marking

Child	Age	Inc/Com	Inc/Pot	Com/Pot
Xhim	2;4	il	-	-
	2;7	-	aq'	-
	2;8	-	il	-
	2;9	-	-	i'
Tum	3;1	chi'	-	-

6.3.2. Productivity of Ergative Marking

Although Xhuw's transitive verbs appeared mostly with first person singular ergative (Table 6.39), she showed contrast with other ergative markings, e.g. second or third person singular. At 1;11 she showed a contrast of the first and third person singular ergative with the transitive verb *i'* 'to take, have'. At 2;1 she produced the same transitive verb (*i'*) with the first person ergative singular in contrast to the first person plural ergative. At 2;0 she showed a contrast of the first and second person singular ergative with the transitive verb *chi'* 'to bite.'

Table 6.39. Xhuw's Contrast Ergative Marking

Age	E1/E3	E1/E2	E1/E4	E2/E3	E2/E4	E1/E3/E4
1;11	i'	-	-	-	-	-
2;0	lo'	chi', oche-	maq'	pul	-	-
2;1	-	pul, b'ut	i'	-	lo'	-
2;3	i-teq, iq	lo'	-	-	-	il
2;4	aq'	-	-	-	-	-

Xhim also produced most of his transitive verbs with the first person singular ergative as shown in Table 6.40, but he showed more contrasts than Xhuw. At the ages 2;3, 2;5, and 2;7, he showed a contrast between the first and second person singular ergative with the transitive verb *il* 'to see'. At the ages 2;4, 2;8, and 2;8 he showed a contrast between the first, second, and third person singular ergative and the first person plural ergative with the same transitive verb (*il*).

Table 6.40. Xhim's Contrast Ergative Marking

	E1/E2	E1/E3	E1/E4	E2/E3	E2/E4	E3/E4	E3/E6	E1/E2/E3	E1/E2/E3/E4
2;3/2;5/2;7	il	-	-	-	-	-	-	-	-
2;4/2;6/2;8	aq'	-	-	-	-	-	-	-	-
2;4/2;8/2;9	-	-	-	-	-	-	-	-	il, man, aq'
2;4	-	-	-	-	iq	-	-	-	-
2;5	-	-	-	-	-	-	-	aq'	-
2;6	-	-	il	une-	-	-	-	-	-
2;7	-	-	toq' ay	-	-	ten	-	-	-
2;8	aq'toq, i-teq, lo'	al. aq'.aj, i el	-	-	-	-	-	-	-
2;4/2;8	-	i	-	-	-	-	-	-	-
2;9	-	-	-	i	-	-	aq'	al	-

Tum's transitive verbs appeared with first, second, third person singular ergative and first person plural ergative (Table 6.41). The transitive verb *chi'* 'to bite' for example, appeared with the first and second person singular ergative at 2;7, at 2;8 the same verb (*chi'*) appeared with the first, second, and third person singular ergative, at 2;11 *chi'* appeared with the first and second person singular ergative contrasting with the first person plural ergative, and at 3;1 the same transitive verb appeared only with first person singular ergative and first person plural ergative.

Table 6.41. Tum's Contrast of Ergative Marking

ages	E1/E2	E1/E3	E1/E4	E2/E3	E1/E2/E3	E1/E2/E4	E1/E3/E4
2;7	chi', tx'aj	man, maq'	-	-	-	-	-
2;7/2;8	uk'e-	-	-	-	-	-	-
2;7/3;1	-	-	lo'	-	-	-	-
2;8	i', il	-	-	al, iq	chi', man, aq'	-	-
2;9	-	lo'	-	-	i-teq	-	-
2;11	-	il	-	-	-	chi', lo'	-
2;10/2;11	une-	-	-	-	-	-	-
3;1	-	aq'.ok, i', i-on, q'an	chi', il	-	-	-	aq'

6.3.3. Status Suffixes

Although these children produced a high frequency of status suffixes they showed fewer contrasts within each age as shown in Xhuw's data (Table 6.42). Most of the contrast is seen

between the indicative (-*v'*) and imperative (-*v'*) suffixes. For instance, Xhuw showed a contrast between the indicative (-*v'*) and nominalizing (-*i*) suffixes between the ages 2;1 and 2;4 with the transitive verb *aq'* 'to give'. Between the ages of 1;11 and 2;3 Xhuw showed a contrast between the indicative (-*v'*) and imperative (-*v'*) suffixes with the transitive verb *i'* 'to take, have'. At 2;3, Xhuw showed a contrast between the indicative (-*v'*), nominalized (-*i*), and imperative (-*v'*) suffixes with the transitive verb *lak* 'to lift up'. For the productivity analysis I combined the status suffixes that appeared in non-final and final positions.

Table 6.42. Xhuw's Contrast Status Suffixes

ages	Ind -*v'*	Imp -*v'*	Nom -*i*	Ind -*v'*/Imp -*v'*	Ind -*v'*/Nom -*i*/Imp -*v'*
1;11	i', iq, b'ut	i'	-	-	-
1;11/2;3	-	-	-	i'	-
1;11/2;0/2;3	iq	-	-	-	-
1;11/2;0/2;1/2;2	b'ut	-	-	-	-
2;0	iq, b'ut, pul	-	lo'	-	-
2;0/2;4	pul	-	-	-	-
2;1	aq', i', lo', b'ut, pul	mitx', pul	-	pul	-
2;1/2;3	-	mitx'	-	-	-
2;1/2;4	i'	-	-	-	-
2;2	iq, b'ut, mitx'	il	-	iq	-
2;3	i', iq, lak, il	-	-	il	lak
2;4	il	-	aq'	-	-

Xhim's contrast for status suffixes is seen primarily with indicative and imperative suffixes as shown in Table 6.43. At 2;3 he showed contrast of the indicative (-*v'*) and nominalizing (-*i*) suffixes with the transitive verb *ten* 'to touch, push'. At 2;4 he showed contrast of the indicative (-*v'*) and imperative (-*v'*) suffixes with the transitive verb *ab'* 'to listen, feel'.

Table 6.43. Xhim's Contrast Status Suffixes

	Ind -*v*'/Imp -*v*'	Ind -*v*'/Nom -*i*	Ind -*v*'/Dep -*v*'	Ind -*v*'/Nom -*i*/Dep -*v*'
2;3	-	ten	-	-
2;3/2;4	-	-	il	-
2;4	ab'	-	-	-
2;4/2;6	man	-	-	-
2;8	aq'	-	-	-
2;8/2;9	il	-	-	-
2;9	-	man	-	il

Compared to Xhuw or Xhim, Tum produced few verbs that show a contrast for the status suffixes (Table 6.44). However, she showed contrast not only between indicative and imperatives, but with the nominalized suffix as well. At 2;8 she showed a contrast between the indicative (-*v'*) and nominalizing (-*i*) suffixes on the transitive verb *man* 'to buy'.

Table 6.44. Tum's Contrast Status Suffixes

	Ind -*v*'	Imp -*v*'	Ind -*v*'/Imp -*v*'	Ind -*v*'/Nom -*i*	Ind -*v*'/Dep -*v*'	Nom -*i*	Dep -*v*'
2;7	-	-	-	-	-	-	il
2;8	-	-	-	-	-	aq'	-
2;8/2;9	maq', al	-	-	man	-	-	-
2;9	-	-	-	-	il	-	-
2;10	-	-	-	-	-	maq'	-
2;10/3;1	-	-	-	-	-	-	il
2;11	-	-	ab'	-	-	-	-
3;0	aq'	-	-	il, lo'	-	-	-
3;1	-	ab'	-	q'an	-	al	-

6.3.4. Summary

As we have seen with the productivity of inflection marked on intransitive verbs, these children showed few contexts of contrasts of aspect marking, but we see more contrasts with the ergative markers. Note that in terms of ergative marking, Xhim is more advanced than Xhuw, but Tum is still more advanced than Xhim. Xhuw and Xhim produced their transitive verbs mostly with the first person singular ergative while Tum produced her transitive verbs with the first

person singular ergative and with the other ergative markers. As for status suffixes, although these children produced a high frequency of different status suffixes with transitive verbs, we do not find many contexts of contrast among the status suffixes within a specific age, but we do find contrast across ages (see Appendix A, B, and C). These children produced mostly the indicative suffix *-v'* in contrast to the imperative (Xhuw and Xhim's data), and some contrasts with the nominalizing suffix *-i*. Table 6.45 provides a summary of the productivity of the three children's transitive verb inflection.

Table 6.45. The Children's Productivity of Transitive Verb Inflection

Child	Aspect	Ergative	Status suffix
Xhuw	-	E1/E2/E3 (2;0) Few plurals	Ind *-v'*/Imp *-v'* (1;11) Ind *-v'*/Imp *-v'*/Nom *-i* (2;3)
Xhim	Inc/Com (2;4) Inc/Pot (2;7) Com/Pot (2;9)	E1/E2/E3 (2;4) Few plurals	Ind *-v'*/Dep *-v'*/Nom *-i* (2;3)
Tum	Inc/Com (3;1)	E1/E2/E3 (2;7) Few plurals	Ind *-v'*/Nom *-i* (2;8) Ind *-v'*/Dep *-v'* (2;9)

The use of the suffix *-on* in nominalized contexts raises several questions. For example, at what age do children use the suffix *-on* in Q'anjob'al? Do children acquire the constraint on the use of *-on* in Q'anjob'al? Do children use *-on* without the suffix *-i*? Do children acquire the suffix *-on* around the same age when they acquire the switch of absolutive morphemes to ergative morphemes? Do the children extend the suffix *-on* to intransitive verbs? Based on the distribution of transitive verbs in indicative and nominalized contexts, an evaluation of the use of suffix *-on* with embedded intransitive verbs, and the distribution of transitive status suffixes shown elsewhere in this dissertation, I suggest that these children have an early knowledge of the constraint on the use of the suffix *-on* in Q'anjob'al. In other words, they know the constraint for nominalized intransitive verbs and nominalized transitive verbs.

These children begin producing the suffix *-on* around the age of 2;1 as seen from Xhuw's data. Although Xhuw produced *-on* as in (36)a, she omitted the same suffix in obligatory contexts with *lo'* 'to eat' conditioned by *lanan* at age 2;0 (36)b, and with *maq'* 'to hit' with a wh-question at age 2;2 (36)c (Table 6.46).

(36) a. xhik**on**i. Xhuw (2;1)
= *x-ø-ø/xiq-**on**-i.
COM-A3s-E3s-cut-INTR-NOM
'S/he cut it.'

b. pan **lan lo'**. Xhuw (2;0)
= pan lanan-ø ø/lo-***hon**-***i**
bread PROG-A3s E3s-eat-INTR-NOM
'It is bread that s/he is eating.'

c. **axh ma**? Xhuw (2;2)
=mak *x-ø/maq'-***on**-***i**?
who COM-A3s-hit-INTR-NOM
'Who hit him/her?'

Table 6.46. Xhuw's Suffix *-on* with Nominalized Transitive Verbs

age	conditions	non-final	final
1;11	uj	-	ten-***on**-i 1pl (1)
2;0	lanan	-	lo-*h**on**-*i 3sg (1)
2;1	no context	-	xiq-**on**-i 3sg (1)
2;2	wh-question	-	maq'-***on**-*i 3sg (1)
2;3	lanan	-	lak-**on**-i 3sg (1)
2;4	lanan	-	aq'-**on**-i 1pl (1)

Xhim produced *-on* in both non-final and final positions (Table 6.47). He omitted *-on* at 2;3 with the transitive verb *ten* 'to touch, push' conditioned by *tay* 'then' as in (37)a. However, although he omitted *-on*, he always produced the suffix *-i*. This suggests that Xhim treats both suffixes *-on*/*-i* as two separate forms and not as one unit.

(37) a. tay **teni**. Xhim (2;3)
= tay ø/ten-***on**-i
then E3s-push/touch-INTR-NOM
'Then s/he pushed/touched it.'

b. **manoni** tx'at jun dominga. Xhim (2;7)
= a jun dominga *x/ø-man-**on-!i** tx'at
FOC one Dominga COM-A3s-buy-INTR-NOM bed
'It was Dominga who bought the bed.'

Table 6.47. Xhim's Suffix *-on* with Nominalized Transitive Verbs

age	contexts	non-final	final
2;3	tay	---	ten-***on**-i 3sg (1)
2;4	-	---	---
2;5	-	---	---
2;6	agent focus	---	man-***on**-i 3sg (2)
2;7	agent focus	man-**on-!i** 3sg (1)	---
2;8	no context	al-**on-!i** 1sg (1)	nul-**on**-i 3sg (1)
		ten-**on** 3sg (2)	---
	wal	aq'-**on** 3sg (1)	---
	ul	il-**on** 3sg (1)	---
2;9	no context	jo-**hon** 3sg (1)	man-**on**-i 3sg (1)
		---	ten-**on**-i 2sg (1)/1pl (1)
	kaq la	---	ten-**on**-i 2sg (1)

Tum also produced *-on* in both non-final and final positions (Table 6.48), but omitted the same suffix in agent focus ((38)a & (38)b). Tum produced the allomorph *-n* (of *-on*) at 2;7 (38)c.

(38) a. un tiha **ahoni**. Tum (2;10)
= jun tiya *x-ø/aq'-**on**-i
one aunt COM-A3s-buy-INTR-NOM
'It was aunt who bought it.'

b. wana a' man atliya. Tum (2;11)
Jwana a' *x-ø/man-***on** atliya
Juana FOC COM-A3s-buy-INTR atliya
'It was Juana who bough atliya.'

c. 'inkale**n**i chom'al. Tum (2;7)
= *x-ø-in/q'anle-**n-!i** txom-b'al
E1s-ask-INTR-NOM sell-LOC
'I asked it in the market.'

Table 6.48. Tum's Suffix *-on* with Nominalized Transitive Verbs

age	contexts	non-final	Final
2;7	no context	q'anle-**n-!i** 1sg (1)	aq'-**on**-i 3sg (1)
	agent focus	---	aq'-**on**-i 3sg (1)
2;8	no context	ten-**on-!i** 1sg (2)	man-**on**-i 3sg (1)
	agent focus	---	man-**on**-i 3sg (1)
2;9	agent focus	aq'-**on** 3sg (1)	maq'-**on**-i 3sg (1)
2;10	agent focus	---	aq'-**on**-i 3sg (1)
2;11	agent focus	man-***on** 3sg (1)	---
	ax	---	il-**on**-i 1sg (1)
	---	---	lo-**hon**-i 3sg (1)
3;0	lanan	ch'ich-**on** 3sg (1)	---
	uj	---	al-**on**-i 1sg (1)
3;1	xew tu	aq'-**on-!i** 1sg (1)	---
	kax	i-**on** 1sg (1)	---
	no context	i-**on** 3sg (1)	---
	kax	man-**on** 1sg (1)	---
	agent focus	---	q'an-**on**-i 3sg (1)

Francisco Pascual (2007) & Mateo Toledo (2008) note that *-on* also occurs in certain discourse contexts. These children produced nominalized transitive verbs with *-on*, but without a conditioning context (Xhuw=1 (Table 6.46), Xhim=2 (Table 6.47), Tum=3 (Table 6.48)). However, after checking the context of these children's use of *-on* I did not find any discourse contexts, therefore I label the use of *-on* in this context as without conditioning context. The optional omission of *-on* from Xhuw's data is seen primarily with *lanan* and *wh-questions*, while Xhim and Tum's omission of the same suffix is seen primarily with *agent focus*. These children may have difficulties in mastering constructions like wh-questions and agent focus. K'iche' speaking children also show a late acquisition of similar constructions (focus antipassive) (Pye, 1993).

In general, two patterns of omission of the suffix *-on* were found in this analysis. Pattern 1: When Xhuw (2;0/2;2) omitted the suffix *-on* she also omitted the suffix *-i*. This suggests that she may treat both suffixes as just one unit. Pattern 2: The same omission pattern was found from Xhim (2;6) and Tum (2;11), but only with agent focus. However, when these two children

omitted the suffix *-on* in other contexts, they never omitted the suffix *-i*. This suggests that they treat both suffixes as separate forms and not just as one unit. The acquisition of *-on* provides evidence that Q'anjob'al children are able to distinguish matrix and embedded clauses by the age of 2;1. Although they showed a late acquisition of aspect, they showed an early acquisition of different suffixes that allows us to evaluate the acquisition of *-on* in nominalized transitive verbs.

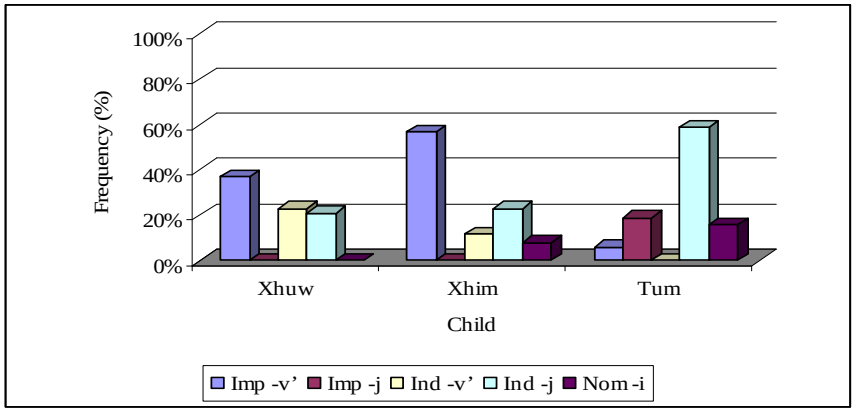
6.4. Errors

Further evidence of productivity is found with the types of errors that these children produced. In this section I discuss the following types of errors: i) overextension of status suffixes in non-final position, ii) omission of status suffixes in final position, and iii) nominalized transitive verbs.

6.4.1. Overextension of Status Suffixes in Non-final Position

The Verb Form Analysis also showed that these children overextended the status suffixes in non-final position as shown in Figure 6.27. In general, transitive status suffixes, with the exception of the status suffix *-j*, are dropped in non-final position. Xhuw and Xhim overextended the imperative and indicative suffix *-v'* in non-final position, but not Tum. Only Tum produced the imperative suffix *-j* in non-final position. The three children also used the status suffix *-j* for indicative in non-final position. Xhim and Tum also overextended the status suffix *-i* in nominalized contexts.

Figure 6.27. Overextension of Status Suffixes in Non-final Position

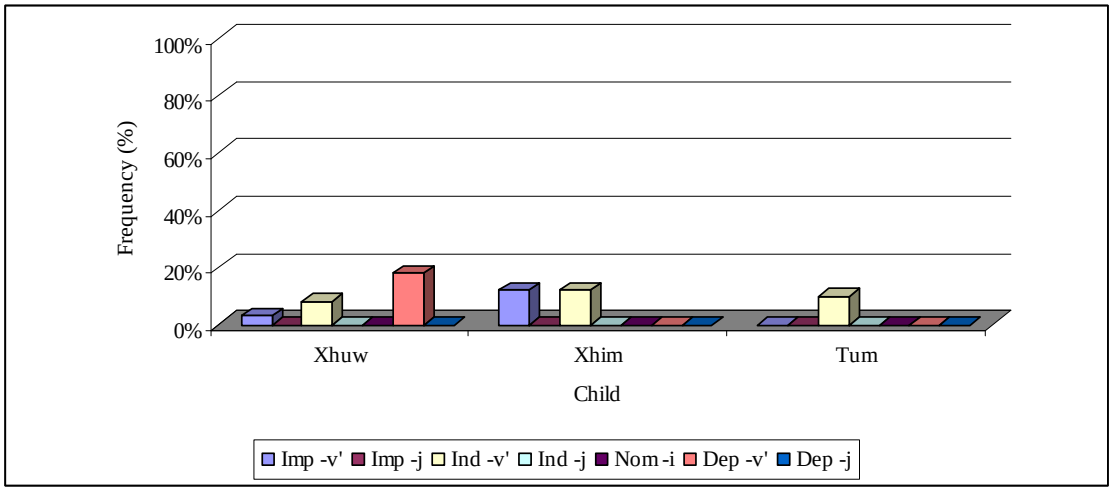


	Imp *-v'*	Imp *-j*	Ind *-v'*	Ind *-j*	Nom *-i*
Xhuw	37%	0%	23%	21%	0%
Xhim	57%	0%	12%	23%	8%
Tum	6%	19%	0%	59%	16%

6.4.2. Omission of Status Suffixes in Final Position

The other type of error was the omission of status suffixes in final position (Figure 6.28). Xhuw and Xhim omitted the majority of status suffixes in final position compared to Tum. Tum omitted only the indicative status suffix *-v'* in final position. Xhuw and Xhim omitted the status suffix *-v'* for imperative and indicative contexts in final position. Xhuw also omitted the status suffix *-v'* in dependent contexts.

Figure 6.28. Omission of Status Suffixes in Final Position



	Imp *-v'*	Imp *-j*	Ind *-v'*	Ind *-j*	Nom *-i*	Dep *-v'*	Dep *-j*
Xhuw	3%	0%	8%	0%	0%	18%	0%
Xhim	12%	0%	12%	0%	0%	0%	0%
Tum	0%	0%	10%	0%	0%	0%	0%

6.4.3. Nominalized Transitive Verbs

Tum produced a nominalized transitive verb conditioned by *jun winaq* 'a man' being focused, but she used an incorrect ergative morpheme.

(39) uun winak **wihon** ayin. Tum (2;8)
= jun winaq !w/i-hon ayin
one man E1s-take-INTR me
'A man had it from me.'

In (33) although Tum produced a bare root, it is clear that the nominalized verb appears in a clear conditioning context. The focus of Juana requires the suffix *-on* with the transitive verb *man* 'to buy'. This suggests that the suffix *-on* for focus in Q'anjob'al may not be fully acquired. This would explain why Tum produced a bare root although she used some complete verb forms without conditioning contexts and bare stems with clear conditioning contexts.

(40) wana a' **man** 'atliya. Tum (2;11)
= wanaa /man-*on atliya
Juana buy-INTR atliya
'It is Juana who bought atliya.'

6.4.4. Summary

Although these children omitted aspect and absolutive morphemes, they produced the ergative morpheme. They overextended the status suffixes in non-final position. The extension of transitive status suffixes in non-final position is similar to findings for the acquisition of status suffixes in K'iche' (Pye, 1990), but different from findings of the acquisition of status suffixes in Yucatec (Pfeiler, 2003). Thus, these children are still acquiring the constraint of status suffixes in non-final and final position. In contrast to intransitive verbs, these children did not show errors with the status suffixes being used with an incorrect aspect or incorrect clause. They also did not show errors of using independent pronouns instead of ergative morphemes.

6.5. Conclusion

In this chapter I presented the acquisition of the transitive verb inflection by applying different kind of analyses: clause types and verb form analysis, frequency analysis, productivity analysis, and error type analysis. As for clause types, both Xhuw and Xhim produced imperative and indicative contexts more than nominalized and dependent contexts, although Xhuw produced more nominalized contexts than Xhim and Tum. Tum produced more indicative and imperative clauses than nominalized clauses; she did not produce dependent clauses. The Verb Form Analysis shows that these children produced mainly transitive bare stem forms due to the omission of aspect and absolutive morphemes (Table 6.49). When they omitted aspect and

absolutive morphemes they always produced ergative morphemes, with the exception of the third person singular ergative *s-*.

Table 6.49. Children's Percentages of Verb Forms in Indicative Context

Child	Position	entire	-asp	-abs	-asp/-abs	-erg	stem	root
Xhuw (1;9-2;4)	Non-final	11(13%)	0(0%)	0(0%)	48(59%)	0(0%)	0(0%)	23(28%)
	Final	29(30%)	0(0%)	0(0%)	53(55%)	1(1%)	5(5%)	9(9%)
Xhim (2;3-2;9)	Non-final	45(18%)	1(0.5%)	0(0%)	142(58%)	3(1%)	12(5%)	42(17%)
	Final	24(21%)	0(0%)	0(0%)	74(65%)	0(0%)	11(10%)	4(4%)
Tum (2;7-3;1)	Non-final	46(17%)	0(0%)	0(0%)	174(63%)	8(3%)	0(0%)	46(17%)
	Final	46(17%)	0(0%)	0(0%)	174(63%)	8(3%)	0(0%)	46(17%)

Although these children produced bare stems they discriminate the morphology of imperative, indicative, nominalized, and dependent clauses. Thus, they did not produce a default form for the four types of clauses explored in the present study. This finding suggest that Q'anjob'al children have knowledge of transitivity. If they do not, then we would not see them using the suffix *-on* optionally with transitive verbs in nominal contexts. Note these children's usage of ergative morphemes and the missing aspect and absolutive morphemes with transitive verbs patterns with the use of absolutive arguments with intransitive verbs. That is, these children produce only person marking with intransitive or transitive verbs. This pattern suggests that Q'anjob'al children may not have any clue about transitivity in that they do not distinguish the morphology of transitive verbs from the morphology of intransitive verbs. However, if this were the case, then we would not see these children producing different types of suffixes driven by the different types of clauses (suffixes for indicative versus imperative clauses, usage of suffixes for transitive verbs versus intransitive verbs, usage of status suffixes of root transitive verbs versus derived transitive verbs as we have seen in section 4).

The Frequency Analysis, summarized in Table 6.25 above, shows that these children did not produce aspect prefixes productively before 3;0. They acquired ergative morphemes at 1;11 before aspect prefixes. The ergative morphemes appeared with singular persons and few with plurals. The Frequency Analysis also shows that these children have not mastered the different status suffixes in Q'anjob'al. In contrast, the Productivity Analysis shows that these children showed contrast first with status suffixes before ergative and aspect markings as shown in Table 6.31 above.

The Error Analysis also shows productivity of the transitive verb inflection in Q'anjob'al. This type of analysis shows two main types of errors: a) omission of aspect and absolutive morphemes with transitive verbs and omission of status suffixes in final position, and b) overextension of status suffixes in non-final position. The extension of transitive status suffixes in non-final position is similar to findings for the acquisition of status suffixes in K'iche' (Pye, 1990), but different from findings of the acquisition of status suffixes in Yucatec (Pfeiler, 2003). The difference between these children's production of the status suffix in non-final position and final position shows that they have acquired the constraint by age 2;0 (Xhuw's data).

Nominalized contexts appeared in a lower frequency in contrast to indicative and imperative contexts. Also, most of these children's verb forms in nominalized contexts were bare stems that suggest finding the suffix *-on*. From Xhim's data we can see that although he produced bare stems in nominalized contexts, he used the suffix *-on* as shown in (41). Xhim optionally produced the suffix *-on* as in (42), in which the nominal transitive verb takes only the nominalizing suffix *-i* and the intransitivizer *-on* is missing. One possible explanation of the use of only *-i* with the transitive verb in (42) is that Xhim overextended the use of the intransitive status suffix to transitive verbs. However, if the use of *-i* is an overgeneralization, we might

expect Xhim to use the transitive status suffixes *-v'/-j* with *-i* in nominalized contexts and not necessarily to use the suffix *-on* with transitive verbs in nominalized contexts.

(41) Nominalized transitive verbs

a. **manon** tx'at jun dominga. Xhim (2;7)
= jun dominga /man-on tx'at
one Dominga buy-INTR bed
'Dominga bought a bed.'

b. **waloni** mam. Xhim (2;8)
= w/al-on-!i *tol *a' mam
E1s-say-INTR-NOM COMP FOC mother
'I thought it was mother.'

(42) tay **teni**. Xhim (2;3) Bare stem
= tay ø/ten-*on-i
then E3s-push-INTR-NOM
'Then, s/he pushed it.'

Chapter 7

Intransitive and Transitive Verbs: A Comparison

Introduction

This chapter provides a comparison of the inflection of intransitive and transitive verbs produced by the three Q'anjob'al children. These children followed a similar pattern for the acquisition of intransitive and transitive verb inflection in Q'anjob'al. In other words, while these children omitted prefixes on their verbs, they produced a variety of status suffixes linked to aspect and to transitivity. The analysis of status suffixes helps to evaluate the acquisition of aspect and transitivity as well as to evaluate the acquisition of verb inflection in four clause types: indicative, nominalized, imperative, and dependent. The verb morphology is realized differently in each clause type. This chapter is organized as follows. Section 1 provides a comparison of the verb forms these children produced in indicative, nominalized, imperative, and dependent clauses; section 2 provides a comparison of the inflection marked on the intransitive and transitive verbs, and section 3 provides a comparison of the productivity of the inflection on intransitive and transitive verbs. In section 4 I provide a brief conclusion with a comparison of the Q'anjob'al child data and Gathercole et. al's (1999) findings for the inflectional morphology in Spanish.

7.1. Verb Form Analysis

In this section I compare the children's verb forms in imperative, indicative, nominalized, and dependent contexts.

7.1.1. Imperative Verb Forms

These children produced primarily stem and root verb forms in imperative contexts for intransitive (Table 7.1) and transitive (Table 7.2) verbs. As this table shows, they omitted the intransitive imperative (-*an*) in non-final position and overextended the transitive imperative (-*v'*) suffixes in non-final position. Both forms are not expected from the adult grammar. The imperative -*an* for intransitive verbs remains in both positions, while the imperative -*v'* remains only in final position.

Table 7.1. Imperative Intransitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
stem	83 (42%)	80 (96%)	54 (89%)
root	115 (58%)	3 (4%)	7 (11%)
Total	198	83	61

Table 7.2. Imperative Transitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
stem	104 (87%)	77 (73%)	18 (29%)
root	15 (13%)	29 (27%)	44 (71%)
Total	119	106	62

7.1.2. Indicative Verb Forms

Table 7.3 shows the intransitive verb forms and Table 7.4 shows the transitive verb forms that these children produced in indicative contexts. These children also showed complete, stem, and root transitive verb forms with one difference compared to intransitive verb forms. They showed few cases of omission of only aspect; they omitted both aspect and absolutive marking. Although aspect and absolutive morphemes were missing, ergative was almost always present, with the exception of the third person singular ergative *s*- that is becoming a zero morpheme. This is also true for intransitive verbs that appeared in nominalized contexts with the third person singular ergative *s*-.

Table 7.3. Indicative Intransitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
complete	19 (5%)	58 (12%)	110 (22%)
-aspect	26 (6%)	40 (9%)	115 (23%)
-absolutive	1 (0%)	2 (0%)	0 (0%)
-ergative	0 (0%)	0 (0%)	0 (0%)
-aspect/-absolutive	0 (0%)	0 (0%)	0 (0%)
stem	192 (46%)	161 (34%)	122 (25%)
root	177 (43%)	206 (44%)	149 30%)
Total	415	467	496

Table 7.4. Indicative Transitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
complete	36 (21%)	69 (19%)	67 (18%)
-aspect	1 (1%)	1 (0%)	2 (1%)
-absolutive	0 (0%)	1 (0%)	0 (0%)
-ergative	0 (0%)	4(1%)	9 (2%)
-aspect/-absolutive	101 (58%)	220 (60%)	234 (63%)
stem	5 (3%)	26 (713%)	8 (2%)
root	32 (18%)	47 (13%)	51 (14%)
Total	175	368	371

7.1.3. Nominalized Verb Forms

The verb forms that these children produced in nominalized context are shown in Table 7.5 (intransitive verbs) and Table 6 (transitive verbs). Xhuw and Tum showed more attempts to produce nominalized intransitive verbs than Xhim. As for nominalized transitive verbs, Xhuw produced fewer forms than Xhim and Tum.

Table 7.5. Nominalized Intransitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
-aspect	30 (77%)	5 (100%)	16 (84%)
stem	3 (8%)	0 (0%)	3 (16%)
root	6 (15%)	0 (0%)	0 (0%)
Total	39	5	19

Table 7.6. Nominalized Transitive Verb Forms

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
-aspect	1 (20%)	6 (38%)	10 (53%)
stem	3 (60%)	10 (63%)	8 (42%)
root	1 (20%)	0 (0%)	1 (5%)
Total	5	16	19

I evaluated the use of these children's transitive verbs in other contexts to see whether their transitive verbs appeared only with the suffix *-on* in nominalized contexts or also with *-on* in other contexts. The data in (1) illustrate Xhuw's transitive verbs in indicative and imperative contexts respectively, while Table 7.7 shows a summary of the distribution of Xhuw's transitive verbs in indicative, nominalized, and imperative contexts.

(1) Xhuw's transitive verbs in other contexts

a. **lo'** yuka. Xhuw (2;0)
= *ch-ø-ø/lo' y-uk'a'
INC-A3s-E3s-eat E3s-drink
Lit: S/he eats her/his drink.

b. **lo'**. Xhuw (2;0)
= /lo'!
Eat it!

Table 7.7. Xhuw's Distribution of Transitive Verbs

verb	age	context
lo'	1;11	Indicative
	2;0	Indicative/Nominalized/Imperative
	2;1	Indicative/Imperative
	2;2	Imperative
maq'	1;11/2;0	Indicative
	2;2	Nominalized
aq'	2;0	Indicative
	2;4	Nominalized
lak	2;3	Indicative/Nominalized
ten	1;11	Nominalized
xiq	2;1	Nominalized

Xhim's transitive verbs in indicative and imperative contexts are shown in (2) and the distribution of his transitive verbs in indicative, nominalized, and dependent contexts are illustrated in Table 7.8.

(2) a. **komana'.** Xhim (2;6)
= *ch-ø-ko/man-a'.
INC-A3s-E1p-buy-VT
'We buy it.'

b. **mana'.** Xhim (2;6)
=/man-a'!
buy-IMP
'Buy it!'

Table 7.8. Xhim's Distribution of Transitive Verbs

verb	age	context
man	2;3/2;8	Indicative
	2;4	Indicative/Imperative
	2;6	Indicative/Nominalized/Imperative
	2;7/2;9	Indicative/Nominalized
ten	2;3	Indicative/Nominalized/Imperative
	2;4	Indicative/Imperative
	2;6/2;7	Indicative
	2;8/2;9	Nominalized
al	2;4/2;9	Indicative
	2;8	Nominalized/Imperative
aq'	2;4/2;5/2;6/2;7	Indicative
	2;8/2;9	Nominalized/Imperative
il	2;4	Indicative/Imperative
	2;5/2;7/2;9	Indicative
	2;8	Indicative/Nominalized/Imperative
jo'	2;9	Imperative

Tum's transitive verbs in imperative and nominalized contexts are shown in (3) and the distribution of her transitive verbs is shown in Table 7.9.

(3) a. **aq'** nlolo'. Tum (2;8)
= /aq' hin-lolo'.
give E1s-candy
'Give me my candy!'

b. tuli **ch'ani.** Tum (2;8)
=doli ch-ø/'aq'-on-i
Dolores INC-A3s-give-INTR-NOM
'It is Dolores who gives it.'

Table 7.9. Tum's Distribution of Transitive Verbs

verb	age	context
aq'	2;7	Indicative
	2;8	Nominalized/Imperative
	2;9/3;1	Indicative/Nominalized
	2;11/3;0	Indicative
i'	2;7	Indicative
	3;1	Indicative/Nominalized/Imperative
il	2;7/2;8/2;9/3;1	Indicative
	2;11	Indicative/Nominalized
man	2;7/2;9/2;10	Indicative
	2;8	Indicative/Nominalized/Imperative
	2;11	Indicative/Nominalized
	3;1	Nominalized
maq'	2;7/2;8	Indicative
	2;9	Nominalized
q'anle-	2;7	Nominalized
al	2;8	Indicative
	3;0	Nominalized
ten	2;8	Nominalized
ch'ich	2;10	Indicative
	3;0	Indicative/Nominalized
q'an	2;10	Indicative
	3;1	Indicative/Nominalized

I also investigated whether these children used only the suffix *-on* with nominalized transitive verbs or extended it to nominalized intransitive verbs. As shown in Table 7.10 these children did not produce the suffix -on with nominalized intransitive verbs.

Table 7.10. Three Children's Nominalized Intransitive Verbs

child	age	contexts	intransitive verb
Xhuw	2;0	lanan	way 3sg (1)
		no context	way 1sg (4), 2sg (6), 1pl (2)
	2;1	no context	ay 3sg (1)
	2;3	no context	toj 1pl (6)
		lanan	way 3sg (3)
		no context	way-!oq 2sg (1)
	2;4	lanan	el-teq 2pl (1)
Xhim	2;9	no context	el 2sg (1)
		lanan	mulnaj 2sg (1)
Tum	2;8	no context	oq' 3sg (1)
	2;10	je'	b'is-l 1sg (1)
		lanan	lo-w- 1sg (1)
	2;11	no context	ok 3sg (1)
			oq' 1sg (1) & 3sg (1)
		watx'	kan 3sg (1)
		lanan	q'anjab' 1sg (2)
	3;1	no context	lo-w 1pl (1)
		ax	ok 3sg (1)
		kax	toj 3sg (1)
			jutx-lay 3sg (1)
			ok 3sg (1)

Although we did not see a clear switch of absolutive to ergative subject markers, I did not find Xhuw producing *-on* with nominalized intransitive verbs (4). I found the switch of absolutive to ergative subject markers around the same age, but without a conditioning context as shown in (4)b.

(4) a. a way lah. Xhuw (2;0)
= lanan ø/way-*i la
PROG E3s-sleep-NOM DEM
'Look, s/he is sleeping.'

b. howay. Xhuw (2;0)
= !ko/way-*i
E1p-sleep-NOM
'Our sleeping'.

Xhim correctly produced an ergative prefix (5)a, but he added the suffix *-il* after the intransitive verb *mulnaj* ‘to work’, which is not expected in the adult grammar. Notice that he did not produce *-on* with embedded intransitive verbs. Tum produced the progressive *lanan* that conditions the intransitive verb *lo-w* to the take the ergative morpheme *hin-* (5)b.

(5) a. lan **hamulnajil** tom. Xhim (2;9)
= lan ha-mulnaj-**!il** dom
PROG E2s-work-ABS Dominga
‘Dominga, you are working.’

b. ja’ lan **hinlowi**. Tum (2;10)
= ja’ /lan hin/lo-w-i
yes PROG E1s-eat-INTR-NOM
‘Yes, I am eating.’

The suffix *-on* with embedded transitive verbs and the switch of absolutive to ergative subject markers appeared around the same age, e.g. Xhuw’s data at 2;0-2;1 (Table 7.11). These children omitted *-on* with nominalized transitive verbs, but they did not extend *-on* to nominalized intransitive verbs.

Table 7.11. Nominalized Intransitive and Transitive Verbs

child	age	-on	abs > erg
Xhuw	1;11	---	---
	2;0	---	way (1sg, 2sg, 1pl)
	2;1	xiq (3sg)	ay (3sg)
	2;2	---	---
	2;3	lak (3sg)	toj (1pl)/way (2sg)
	2;4	aq’ (1pl)	el-teq (2pl)
Xhim	2;3	---	---
	2;4	---	---
	2;5	---	---
	2;6	---	---
	2;7	man (3sg)	---
	2;8	al (1sg)	---
	2;9	jo’ (3sg)	mulnaj (2sg)
Tum	2;7	q’anle- (1s)	---
	2;8	ten (1sg)	oq' (3sg)
	2;9	aq’ (3sg)	---
	2;10	aq’ (3sg)	b'is-l (1sg)
	2;11	il (1sg)	ok (3sg)
	3;0	ch’ich (3sg)	---
	3;1	aq’ (1sg)	lo-w (1pl)

7.1.4. Dependent Verb Forms

Table 7.12 shows the dependent verb forms that the children produced. With the exception of Xhuw, these children produced more dependent verb forms with intransitive verbs than with transitive verbs. Tum did not produce dependent verb forms with transitive verbs at all.

Table 7.12. Dependent Intransitive and Transitive Verb Forms

	Xhuw (1;9-2;4)		Xhim (2;3-2;9)		Tum (2;7-3;1)	
	IV	TV	IV	TV	IV	TV
stem	11 (15%)	14 (82%)	48 (41%)	4 (44%)	102 (51%)	0 (0%)
root	63 (85%)	3 (18%)	68 (59%)	5 (56%)	98 (49%)	0 (0%)
Total	74	17	116	9	200	0

7.2. Frequency Analysis

In this section I compare the frequency of the acquisition of the inflectional morphemes marked on intransitive and transitive verbs.

7.2.1. Aspect Contexts

The three children's intransitive and transitive verbs appeared most frequently in incompletive contexts (Table 7.13). Table 7.13 shows two frequency distributions of aspect contexts in the children's data. On the one hand, Xhuw produced verbs in the following frequency order of aspect contexts: incompletive > completive > potential. On the other hand, Xhim and Tum produced aspect contexts starting from incompletive > potential > completive. Although these children produced a high frequency of verbs in incompletive contexts they did not acquire aspect marking on their verbs until the age 2;9.

Table 7.13. Aspect Contexts

	Xhuw (1;9-2;4)		Xhim (2;3-2;9)		Tum (2;7-3;1)	
	IV	TV	IV	TV	IV	TV
incompletive	239 (57%)	75 (94%)	142 (45%)	320 (87%)	249 (50%)	280 (74%)
completive	161 (38%)	2 (3%)	65 (21%)	26 (7%)	112 (23%)	44 (12%)
potential	21 (5%)	3 (4%)	109 (34%)	22 (6%)	136 (27%)	54 (14%)
Total	421	80	316	368	497	378

7.2.2. Absolutive Contexts

Table 7.14 shows the frequency of absolutive contexts produced by the three children. These children produced their intransitive verbs mostly with third person singular absolutive followed by first person singular absolutive and first person plural absolutive. The other absolutive markings appeared in a lower frequency or they did not appear. Table 7.15 shows that these children switched absolutive morphemes to ergative morphemes in nominalized contexts. In nominalized verb forms in section (3.2) above I showed that these children started to show this switching around the age of 2;1 (Xhuw's data).

Table 7.14. Absolutive Contexts

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
A1s	35 (7%)	59 (14%)	144 (28%)
A2s	3 (1%)	16 (4%)	9 (2%)
A3s	376 (80%)	279 (69%)	313 (61%)
A1p	30 (6%)	27 (7%)	21 (4%)
A2p	0 (0%)	0 (0%)	0 (0%)
A3p	0 (0%)	19 (5%)	9 (2%)

Table 7.15. Ergative Morphemes in Nominalized Context

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
E1s	10 (2%)	1 (0%)	10 (2%)
E2s	8 (2%)	1 (0%)	0 (0%)
E3s	2 (0%)	5 (1%)	8 (2%)
E1p	7 (1%)	0 (0%)	2 (0%)
Total	471 (100%)	407 (100%)	516 (100%)

7.2.3. Ergative Contexts

The children's ergative contexts are shown in Table 7.16. Xhuw produced verbs in mostly second and first person singular ergative contexts followed by the third person singular ergative context, while Xhim and Tum produced verbs in first and third person singular ergative contexts followed by the second person singular ergative context.

Table 7.16. Ergative Contexts

	Xhuw (1;9-2;4)	Xhim (2;3-2;9)	Tum (2;7-3;1)
E1s	51 (27%)	168 (47%)	183 (49%)
E2s	94 (50%)	62 (17%)	50 (13%)
E3s	33 (18%)	93 (26%)	116 (31%)
E1p	10 (5%)	32 (9%)	20 (5%)
E2p	0 (0%)	0 (0%)	1 (0%)
E3p	0 (0%)	6 (2%)	3 (1%)
Total	188	361	373

7.2.4. Status Contexts

The children's status suffix contexts are shown in Table 7.17. These children produced verbs in mostly indicative and imperative contexts; dependent and nominalizing contexts appeared at a

lower frequency. Xhuw produced dependent suffixes with intransitive (*-oq*) and transitive (*-v'*) while Xhim and Tum produced only the dependent suffix -oq with intransitive verbs.

Table 7.17. Status Contexts

	Xhuw (1;9-2;4)		Xhim (2;3-2;9)		Tum (2;7-3;1)	
Status suffixes	IV	TV	IV	TV	IV	TV
Imperative	83 (29%)	104 (48%)	82 (26%)	71 (56%)	102 (36%)	23 (20%)
Indicative	192 (66%)	92 (43%)	163 (53%)	39 (31%)	122 (44%)	75 (65%)
Nominalized	3 (1%)	6 (3%)	0 (0%)	17 (13%)	0 (0%)	17 (15%)
Dependent	11 (4%)	14 (6%)	65 (21%)	0 (0%)	56 (20%)	0 (0%)
Total	289	216	310	127	280	115

7.3. Productivity

The children's productivity of inflection with intransitive verbs is shown in Table 7.18 while their productivity of inflection with transitive verbs is shown in Table 7.19. A comparison of both tables shows the following. These children showed contrast of aspect marking until the age of 2;4 (Xhim's data), but with a low frequency. As for the absolutive markers, we see a gap for Xhuw's data, therefore we see contrast of absolutive morphemes around 2;4 (Xhim's data). We see contrast at 1;11 for ergative morphemes (Xhuw's data). Thus, these children showed contrast with absolutive morphemes, but more contrast with status suffixes. They distinguished intransitive status suffixes from transitive status suffixes.

Table 7.18. Productivity of Intransitive Inflection

child	aspect	absolutive	status suffix
Xhuw	-	-	potential *-oq*/dependent *-oq* (2;1)
	-	-	indicative *-i*/potential *-oq* (2;1)
	-	-	indicative *-i*/nominalized *-i*/dependent *-oq* (2;0)
	-	-	indicative *-i*/nominalized *-i*/imperative *-n* (2;3)
Xhim	inc/com (2;5)	A3s/A3p (2;4)	indicative *-i*/imperative *-an*/potential *-oq* (2;4)
	-	A1s/A2s (2;5)	indicative *-i*/potential *-oq*/imperative *-n* (2;4)
	-	A1s/A2s/A3s (2;9)	-
Tum	inc/pot (2;11)	A1s/A3s (2;7)	indicative *-i*/dependnet *-oq* (2;7)
	inc/com (3;1)	A1s/A2s/A3s (2;8)	indicative *-i*/imperative *-n* (2;7)
	-	-	indicative *-i*/imperative *-an* (2;8)

Table 7.19. Productivity of Transitive Inflection

child	aspect	ergative	status suffix
Xhuw	-	E1s/E3s (1;11)	indicative *-v'*/imperative *-v'* (1;11)
	-	E1s/E2s (2;0)	indicative *-v'*/nominalized *-i*/imperative *-v'* (2;3)
	-	E1s/E1p (2;1)	
Xhim	inc/com (2;4)	E1s/E2s/E3s/E1p (2;4)	indicative *-v'*/nominalized *-i*/dependent *-v'* (2;3)
	inc/pot (2;8)	-	-
	com/pot (2;9)	-	-
Tum	inc/com (3;1)	E1s/E2s/E3s (2;8)	indicative *-v'*/nominalized *-i*/dependent *-v'* (2;8)
		E1s/E2s/E1p (2;11)	-

7.4. Conclusion

As for clause types, there is a difference of the frequency of production of the children's clause types. However, in the comparison of verb types, verb forms, inflection, and productivity we see that these children followed similar patterns. As for verb types, they produced more transitive verbs than intransitive verbs. Furthermore, they produced more consonant-initial verbs than vowel-initial verbs. As for their verb forms, they showed a systematic omission of prefixes. Although these children produced intransitive and transitive verbs as complete forms, they also produced other forms such as bare stems and bare roots. More specifically, with intransitive verbs, when they omitted aspect they always produced the absolutive morpheme with the exception that third person singular absolutive is a zero morpheme. In contrast, with transitive verbs, they omitted aspect and absolutive morphemes, but they always produced the ergative morpheme. The fact that they produced absolutive morphemes with intransitive verbs and ergative morphemes with transitive verbs raises the question whether these children consider Q'anjob'al as a nominative/accusative language and not an ergative language. In fact, these children consider Q'anjob'al as an ergative language given that they used a variety of status suffixes to distinguish aspect, transitivity, and clause types. Nominalized contexts provide one test of the acquisition of the morphology of different clause types in Q'anjob'al. These children distinguished nominalized intransitive verbs from nominalized transitive verbs around the age of

2;1 (see Table 7.13). These children also distinguished the morphology of imperative and dependent clauses with intransitive and transitive verbs.

As for inflection, these children produced their intransitive and transitive verbs with incompletive aspect, but with two exceptions in the acquisition order of aspect. Xhuw produced the following order: incompletive > completive > potential. In contrast, Xhim and Tum produced the following order: incompletive > potential > completive. These children produced mostly third person absolutive and third person ergative morphemes. Xhuw also produced the second person singular ergative, while Xhim and Tum produced the third person singular ergative in addition to the first person singular ergative. They produced mostly indicative and imperative suffixes in intransitive and transitive verbs. Finally, as for productivity, they showed productivity in the following order: status suffixes > person > aspect, given that they acquired status suffixes before agreement and aspect markings.

Gathercole et. al. (1999) studied the productivity of the verb inflection in Spanish by evaluating data from Maria (1;6-2;6) and Juan (1;8-2;1). From an accumulative fashion, Gathercole, et. al. argue that their two subjects acquired the Spanish verb inflection in a piecemeal fashion. Spanish verbs have a single suffix inflection that marks a combination of tense, number, and agreement. Thus, Spanish has only a single dimension of contrast marked by the verb inflection. Intransitive and transitive verbs in Q'anjob'al have separate affixes for aspect, subject, and status. Thus, the inflectional paradigm for intransitive and transitive verbs in Q'anjob'al consequently has three dimensions of inflectional contrast compared with the single dimension for Spanish, and therefore three possible degrees of productivity. In contrast to Gathercole, et. al.'s study in Spanish, for the productivity analysis in Q'anjob'al I evaluated the children's verb inflection age by age. The three Q'anjob'al showed an early knowledge of the

verb inflection in imperative, indicative, nominalized, and dependent clauses. These children showed a preference of bare stems in the four types of clauses, but they discriminated the verb inflection in each clause type and they did not use a default form (e.g. intransitive imperative form) as Gathercole, et. al., 1999, Salustri and Hyams (2003), and the Symbolic Model (e.g. Bybee, 1995) would suggest. Although these children optionally omitted aspect and person prefixes, they always produced the status suffixes, which is linked to aspect and person marking. Other authors like Rus and Chandra, 2006) claim that imperatives are not analogs of Root Infinitives.

Chapter 8

Input and Q'anjob'al Child Data

Introduction

Researchers have argued (e.g. Tomasello, 2003) that the input accounts for what children acquire. Following the Frequency Analysis (Brown, 1973), we may predict that a Q'anjob'al child may acquire first the clausal types or the inflectional morphemes that appear in a higher frequency in the input. In this chapter I provide an analysis of the clausal types and inflectional morphemes of the input and its comparison against the clausal types and inflectional morphemes of the Q'anjob'al child data. The analysis focuses on a comparison between the input data and the child data, based on clausal types and the inflectional morphology (aspect, person, and suffixes) marked on intransitive and transitive verbs. Based on this analysis, I point out that the input cannot be directly responsible for the frequency of the inflectional morpheme marked on the verbs and their appearance in the four clauses types explored in the present study. In other words, there is not a correlation between the input and the child data. However, the second comparison (between the three children) shows that although their data do not match the input data, their productions have more in common.

8.1. The Input

Although there were some exceptions as in (1), the extraction of the inflectional data for intransitive verbs from the input (1)a was straightforward compared to the child data (1)b. (1)b shows that the status suffix *-i* for intransitive verbs is extended to non-final position. In Q'anjob'al with some intransitive verbs (also with some root transitive verbs), the status suffix also appears in non-final position, which has not been explored in the Mayan languages. I do not

discuss this issue in this dissertation. In (1)b, not only the progressive *lanan* ‘in progress’ that drives nominalization is missing from Xhuw’s father, but also the nominalizing suffix is missing in final position. In (1)c, the imperative suffix *-an* is missing in non-final position, while in (1)c, the dependent suffix *-oq* is also missing, but in final position. Notice that in the session analyzed for the input, these types of omission occurred only once. However, as Brown (1973) reports for English, the omission of inflectional morphemes or clauses in the input as shown in (1) can be intentionally dropped in baby talk. Recall that Xhuw’s father produced more baby talk than other parents. Note that in the input data we rarely find omission errors; it was not difficult to discriminate inflectional morphemes. For the extraction of the child data the contextual environment was used.

(1) a. tol **ch’achinwi** naq bebe ti. Xhuw’s father
=tol ch-ø/’achin-w-i naq bebe ti
COMPL INC-A3s-bath-INTR-IV CL baby DEM
‘This baby is taking a bath.’

b. lo no txitam ti jun ti la.
=*ch-ø-ø/lo no txitam ti jun ti la
INC-A3s-E3s-eat CL pig DEM one DEM DEM
‘The pig eats this one.’

b. **away**.
=*lanan-ø ha/way-*i
PROG-A3s E3s-sleep-NOM
‘You are sleeping.’

c. **way** mija.
= /way-*an m-ija.
sleep-imp my-daughter
‘Sleep my daughter!’

d. qach ay **pixh**.
= q-ach /ay /pis-*an-*oq.
pot-a2s down-sit-pos-dep
‘You will sit.’

8.2. Clausal Types: Input and Child Data

Table 8.1 shows the rank order of clause types from the input in contrast to the children's acquisition rank order of clause types. The input data and child data being compared in this chapter come from one hour of recording. The input data come from Xhuw's father and the children's data come from two sessions grouped into one as shown by the ages in Table 8.1. The first column shows the different clausal types; the second column shows the rank order of the clausal types from the input; and the remaining columns show the three children's frequency rank order in production. We have a good match between the input and the child data or between the child data if the difference is not more than 3 points, but we have a bad match if the points have a difference of more than 4 points. The matches between the input and the child data are shown in the shaded cells.

Table 8.1. Clausal Types: Input and Child Data

Clausal types	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
Transitive indicative (NF)	1 (40)	7 (7)	4 (6)	5 (10)
Transitive indicative (F)	2 (32)	3 (21)	1 (23)	3 (23)
Transitive imperative (NF)	3 (30)	2 (28)	7 (2)	4 (22)
Intransitive imperative (NF)	4 (15)	13 (0)	9.5 (1)	6 (8)
Intransitive indicative (NF)	5 (14)	9 (1)	14 (0)	7.5 (7)
Intransitive indicative (F)	7 (12)	13 (0)	14 (0)	11 (1)
Intransitive dependent (NF)	7 (12)	13 (0)	14 (0)	14.5 (0)
Transitive imperative (F)	7 (12)	5.5 (8)	6 (3)	9 (5)
Intransitive dependent (F)	9 (9)	13 (0)	5 (5)	1 (33)
Nominalized intransitive (NF)	10 (8)	2 (28)	2.5 (12)	2 (24)
Transitive dependent (NF)	11.5 (3)	8 (2)	9.5 (1)	7.5 (7)
Transitive dependent (F)	11.5 (3)	4 (10)	2.5 (12)	11 (1)
Nominalized intransitive (F)	13.5 (2)	13 (0)	14 (0)	14.5 (0)
Nominalized transitive (F)	13.5 (2)	5.5 (8)	9.5 (1)	14.5 (0)
Nominalized transitive (NF)	15 (1)	13 (0)	9.5 (1)	14.5 (0)
Intransitive imperative (F)	16 (0)	13 (0)	14 (0)	11 (1)

As Table 8.2 shows, the rank order of the clausal types in the input does not match the child data. The only clause types that match between the input and the child data are: transitive

indicative clauses in final position, transitive imperative clauses in final position, and nominalized intransitive verbs in final position. After that we can see that the input data match with the child data, but child by child.

Although the child data do not match exactly with the input, we see a match of the three children's data. We see more shaded cells when we compare the three children's data than when we compare the same data against the input. There are three clausal types where we do not see matching among the three children: intransitive imperative clauses in non-final position, intransitive dependent clauses in final position, and nominalized transitive verbs in final position. In each of these cases, data is missing from one of the children. In other cases we see matching only between two children. For example, while Xhuw did not match with Xhim for transitive imperative clauses in non-final position (5 points), her clausal types matched with Tum's clausal types (2 points). Xhim and Tum show matching of the same clausal type (3 points).

Table 8.2. Clausal Types: Child Data

Clausal types	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
Transitive indicative (NF)	1 (40)	7 (7)	4 (6)	5 (10)
Transitive indicative (F)	2 (32)	3 (21)	1 (23)	3 (23)
Transitive imperative (NF)	3 (30)	2 (28)	7 (2)	4 (22)
Intransitive imperative (NF)	4 (15)	13 (0)	9.5 (1)	6 (8)
Intransitive indicative (NF)	5 (14)	9 (1)	14 (0)	7.5 (7)
Intransitive indicative (F)	7 (12)	13 (0)	14 (0)	11 (1)
Intransitive dependent (NF)	7 (12)	13 (0)	14 (0)	14.5 (0)
Transitive imperative (F)	7 (12)	5.5 (8)	6 (3)	9 (5)
Intransitive dependent (F)	9 (9)	13 (0)	5 (5)	1 (33)
Nominalized intransitive (NF)	10 (8)	2 (28)	2.5 (12)	2 (24)
Transitive dependent (NF)	11.5 (3)	8 (2)	9.5 (1)	7.5 (7)
Transitive dependent (F)	11.5 (3)	4 (10)	2.5 (12)	11 (1)
Nominalized intransitive (F)	13.5 (2)	13 (0)	14 (0)	14.5 (0)
Nominalized transitive (F)	13.5 (2)	5.5 (8)	9.5 (1)	14.5 (0)
Nominalized transitive (NF)	15 (1)	13 (0)	9.5 (1)	14.5 (0)
Intransitive imperative (F)	16 (0)	13 (0)	14 (0)	11 (1)

8.3. Verb Inflection

For the comparison of the inflectional morphemes between the input and the child data, I evaluated the percent use of the inflectional morphemes with intransitive and transitive verbs.

8.3.1. Intransitive Verbs: Input and Child Data

A comparison of inflectional morphemes for intransitive verbs from the input and the child data is shown in Table 8.3. As this table shows, the inflectional morphemes from the input that match the three children's data are: potential aspect, indicative suffix *-i* in final position, dependent suffix *-oq* in non-final position, the indicative suffix *-i* in non-final position, and the nominalizing suffix *-i* in final position. Then, we see other matching of the input data with the child data, but child by child. For example, the incompletive aspect from input matched with Xhim's incompletive aspect, but it did not match with Xhuw or Tum. Note that the third person singular absolutive is a zero morpheme.

Table 8.3. Intransitive Verbs: Input and Child Data

Inflection	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
imperative *-an* (NF)	2 (15)	2 (1.0=1/1)	3 (1.0=6/6)	8 (.20=2/10)
indicative *-i* (F)	3.5 (12)	6 (.05=1/19)	3 (1.0=21/21)	6.5 (.40=2/5)
dependent *-oq* (NF)	3.5 (12)	4 (.81=21/26)	3 (1.0=2/2)	5 (.50=1/2)
Incompletive	5.5 (9)	11 (0=0/31)	6 (.10=1/10)	9 (.09=3/33)
dependent *-oq* (F)	5.5 (9)	11 (0=0/0)	3 (1.0=1/1)	6.5 (.40=2/5)
A2	7.5 (8)	11 (0=0/0)	11 (0=0/2)	12.5 (0=0/0)
Nominalizing *-i* (NF)	7.5 (8)	2 (10=1/1)	11 (0=0/1)	2 (1.0=5/5)
Completive	9 (6)	11 (0=0/17)	11 (0=0/3)	12.5 (0=0/3)
Potential	10 (5)	11 (0=0/1)	11 (0=0/12)	12.5 (0=0/8)
A4	12 (2)	11 (0=0/0)	11 (0=0/9)	2 (1.0=1/1)
Indicative *-i* (NF)	12 (2)	11 (0=0/0)	11 (0=0/0)	12.5 (0=0/0)
Nominalizing *-i* (F)	12 (2)	11 (0=0/0)	11 (0=0/0)	12.5 (0=0/0)
A1	14 (1)	5 (.25=1/4)	11 (0=0/1)	4 (.92=22/24)
Imperative *-an* (F)	15 (0)	2 (1.0=9/9)	3 (1.0=3/3)	2 (1.0=5/5)

However, when we compare only the child data, we see that there is a good matching among the three children's data (Table 8.4). We do not see matching of the children's data only with the dependent suffix *-oq* in final position. In other cases, we only see matching between two children as in the case of the incompletive aspect that matches between Xhim and Tum, but not with Xhuw.

Table 8.4. Intransitive Verbs: Child Data

Inflection	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
A3	1 (21)	11 (0=0/44)	11 (0=0/13)	12.5 (0=0/18)
imperative -an (NF)	2 (15)	2 (1.0=1/1)	3 (1.0=6/6)	8 (.20=2/10)
indicative -i (F)	3.5 (12)	6 (.05=1/19)	3 (1.0=21/21)	6.5 (.40=2/5)
dependent -oq (NF)	3.5 (12)	4 (.81=21/26)	3 (1.0=2/2)	5 (.50=1/2)
incompletive	5.5 (9)	11 (0=0/31)	6 (.10=1/10)	9 (.09=3/33)
dependent -oq (F)	5.5 (9)	11 (0=0/0)	3 (1.0=1/1)	6.5 (.40=2/5)
A2	7.5 (8)	11 (0=0/0)	11 (0=0/2)	12.5 (0=0/0)
nominalizing -i (NF)	7.5 (8)	2 (10=1/1)	11 (0=0/1)	2 (1.0=5/5)
completive	9 (6)	11 (0=0/17)	11 (0=0/3)	12.5 (0=0/3)
potential	10 (5)	11 (0=0/1)	11 (0=0/12)	12.5 (0=0/8)
A4	12 (2)	11 (0=0/0)	11 (0=0/9)	2 (1.0=1/1)
indicative -i (NF)	12 (2)	11 (0=0/0)	11 (0=0/0)	12.5 (0=0/0)
nominalizing -i (F)	12 (2)	11 (0=0/0)	11 (0=0/0)	12.5 (0=0/0)
A1	14 (1)	5 (.25=1/4)	11 (0=0/1)	4 (.92=22/24)
imperative -an (F)	15 (0)	2 (1.0=9/9)	3 (1.0=3/3)	2 (1.0=5/5)

8.3.2. Transitive Verbs: Input and Child Data

A comparison of transitive verbs from the input and the child data is shown in Table 8.5. As this table shows, the inflectional morphemes of transitive verbs from the input and the child data show a match with the three children only with the imperative suffix *-v'* in non-final position, the indicative *-j* in final position, the third person singular ergative, and the dependent suffix *-j* in final position. In other cases, the matching of the input data occurred child by child. In Table 7.5 I included only the third person singular ergative *-y* before vowels and not the third person singular ergative s- before consonants due to its opaque form.

Table 8.5. Comparison: Input and Child Data

Inflectional	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
E2	1 (60)	8 (.90=18/20)	4.5 (1.0=3/3)	8 (.60=6/10)
incompletive	2 (41)	11 (.48=14/29)	12 (.26=5/19)	11 (.07=4/54)
indicative -v' (NF)	3 (34)	4.5 (1.0=1/1)	11 (.33=1/3)	16.5 (0=0/0)
imperative -v' (NF)	4 (20)	4.5 (1.0=2/2)	4.5 (1.0=1/1)	4.5 (1.0=6/6)
indicative -j (F)	5 (17)	4.5 (1.0=13/13)	4.5 (1.0=1/1)	4.5 (1.0=3/3)
potential	6 (15)	17 (0=0/2)	17.5 (0=0/0)	16.5 (0=0/1)
indicative -v' (F)	7 (14)	17 (0=0/0)	4.5 (1.0=1/1)	16.5 (0=0/0)
completive	8.5 (13)	12 (.33=1/3)	17.5 (0=0/0)	9 (.29=2/7)
imperative -v' (F)	8.5 (13)	17 (0=0/0)	10 (.38=3/8)	4.5 (1.0=1/1)
imperative -j (NF)	10 (10)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)
E3	12 (5)	10 (.50=2/4)	13 (.14=1/7)	10 (.20=8/10)
E4	12 (5)	17 (0=0/0)	17.5 (0=0/0)	4.5 (1.0=1/1)
indicative -j (NF)	12 (5)	4.5 (1.0=1/1)	4.5 (1.0=1/1)	4.5 (1.0=3/3)
dependent -v' (NF)	14 (3)	17 (0=0/0)	4.5 (1.0=1/1)	16.5 (0=0/0)
E1	16.5 (2)	9 (.82=9/11)	9 (.78=7/9)	4.5 (1.0=40/40)
dependent -j (F)	16.5 (2)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)
nominalizing -i (F)	16.5 (2)	4.5 (1.0=1/1)	4.5 (1.0=1/1)	16.5 (0=0/0)
dependent -v' (F)	19 (1)	4.5 (1.0=8/8)	4.5 (1.0=1/1)	16.5 (0=0/0)
nominalizing -i (NF)	19 (1)	17 (0=0/0)	17.5 (0=0/0)	4.5 (1.0=1/1)
imperative -j (F)	19 (1)	4.5 (1.0=10/10)	17.5 (0=0/0)	16.5 (0=0/0)
dependent -j (NF)	21 (0)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)

Although the inflectional morphemes of transitive verbs from the input do not match with the child data, we see that the three children's data show a good matching across their inflectional morphemes as shown in Table 8.6. The only two inflectional morphemes where the three children's data do not match are with the indicative suffix *-v'* in non-final position and the imperative suffix *-v'* in final position.

Table 8.6. Comparison: Child Data

Inflectional	Input	Xhuw (1;11)	Xhim (2;3)	Tum (2;7)
E2	1 (60)	8 (.90=18/20)	4.5 (1.0=3/3)	8 (.60=6/10)
incompletive	2 (41)	11 (.48=14/29)	12 (.26=5/19)	11 (.07=4/54)
indicative -v' (NF)	3 (34)	4.5 (1.0=1/1)	11 (.33=1/3)	16.5 (0=0/0)
imperative -v' (NF)	4 (20)	4.5 (1.0=2/2)	4.5 (1.0=1/1)	4.5 (1.0=6/6)
indicative -j (F)	5 (17)	4.5 (1.0=13/13)	4.5 (1.0=1/1)	4.5 (1.0=3/3)
potential	6 (15)	17 (0=0/2)	17.5 (0=0/0)	16.5 (0=0/1)
indicative -v' (F)	7 (14)	17 (0=0/0)	4.5 (1.0=1/1)	16.5 (0=0/0)
completive	8.5 (13)	12 (.33=1/3)	17.5 (0=0/0)	9 (.29=2/7)
imperative -v' (F)	8.5 (13)	17 (0=0/0)	10 (.38=3/8)	4.5 (1.0=1/1)
imperative -j (NF)	10 (10)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)
E3	12 (5)	10 (.50=2/4)	13 (.14=1/7)	10 (.20=8/10)
E4	12 (5)	17 (0=0/0)	17.5 (0=0/0)	4.5 (1.0=1/1)
indicative -j (NF)	12 (5)	4.5 (1.0=1/1)	4.5 (1.0=1/1)	4.5 (1.0=3/3)
dependent -v' (NF)	14 (3)	17 (0=0/0)	4.5 (1.0=1/1)	16.5 (0=0/0)
E1	16.5 (2)	9 (.82=9/11)	9 (.78=7/9)	4.5 (1.0=40/40)
dependent -j (F)	16.5 (2)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)
nominalizing -i (F)	16.5 (2)	4.5 (1.0=1/1)	4.5 (1.0=1/1)	16.5 (0=0/0)
dependent -v' (F)	19 (1)	4.5 (1.0=8/8)	4.5 (1.0=1/1)	16.5 (0=0/0)
nominalizing -i (NF)	19 (1)	17 (0=0/0)	17.5 (0=0/0)	4.5 (1.0=1/1)
imperative -j (F)	19 (1)	4.5 (1.0=10/10)	17.5 (0=0/0)	16.5 (0=0/0)
dependent -j (NF)	21 (0)	17 (0=0/0)	17.5 (0=0/0)	16.5 (0=0/0)

8.4. Summary

With the brief comparison of the input and the Q'anjob'al child data we have seen that the frequency of the clausal types and the frequency of the inflectional morphemes marked on the verbs in the input is not responsible for the verb inflections that Q'anjob'al children produce. The input does not predict the late acquisition of aspect marking on verbs nor does it predict why Q'anjob'al children would produce aspect marking more frequently on vowel-initial verbs than on consonant-initial verbs. The input does not predict the early acquisition of the status suffixes. We have seen that the different suffixes are generally acquired no matter what the input frequency was. The input fails to predict the overextension of suffixes in non-final position as well as their omission in final position. While we did not see enough matching of the input data with the child data, we saw a good matching of the three children's data. This means that even

though these children produced many verbs in incompletive aspect contexts, they did not produce the incompletive aspect prefix.

Chapter 9

Conclusion

In this chapter I summarize the main findings of my study on the acquisition of verb inflection in Q'anjob'al. In section 1 I present my findings, in section 2 I revisit the theoretical predictions derived from previous studies, in section 3 I discuss the implications of the findings for current first language acquisition theories. In section 4 I provide further directions for my research on the acquisition of Mayan languages.

9.1. Findings

Mayan acquisition studies have shown that Mayan children omit verb inflections for aspect and agreement in indicative clauses. The present dissertation explored the acquisition of the verb inflection of intransitive and transitive verbs in imperative, indicative, nominalized, and dependent clauses. By performing a Verb Form Analysis, Frequency Analysis, Productivity Analysis, and Error Analysis I showed that Q'anjob'al children follow the general Mayan pattern in the acquisition of verb inflection in indicative clauses. Although these children omitted aspect and agreement markers in indicative clauses, they produced different verb inflections in imperative, nominalized, and dependent clauses. Thus, at an early age these children distinguished matrix clauses from other types of dependent clauses. These children used imperative, indicative, nominalized, and dependent clauses in Q'anjob'al, but with some differences. Xhuw, for example, produced more imperative and indicative clauses than nominalized and dependent clauses with intransitive and transitive verbs. In contrast, Xhim and Tum produced more indicative and dependent clauses than nominalized and imperative clauses with intransitive verbs. Both Xhim and Tum produced more imperative and indicative clauses

with transitive verbs. These children produced fewer nominalized clauses, with the exception of Xhuw, who produced more contexts of nominalization.

While it is true that Q'anjob'al children omitted aspect and absolutive prefixes in indicative clauses as in other Mayan languages or as shown cross-linguistically, they followed the constraint of the verb inflection of imperative, nominalized, and dependent clauses as shown by the Verb Form Analysis. According to this analysis, the omission of aspect and agreement in indicative clauses did not prevent these children from using the verb inflections for imperative, nominalized, and dependent clauses. For example, the children occasionally produced aspect and agreement markers in indicative contexts, but did not produce these prefixes in nominalized contexts where verbs lack aspect.

The children produced a curious distinction between the use of absolutive and ergative cross-reference markers. While they frequently omitted absolutive markers, they seldom omitted ergative markers. This discrepancy may be due to the use of unanalyzed verb forms with ergative prefixes but not with absolutive prefixes.

The Verb Form Analysis, the Frequency Analysis, and the Productivity Analysis showed that Q'anjob'al children do not produce the aspect prefixes before the age of 2;9 in indicative contexts. The children's rate of aspect production was not influenced by the frequency of the verb contexts. While the children produced many sentences in incompletive contexts, they did not produce the incompletive aspect prefix earlier than the completive and potential aspect prefixes. This finding is different from K'iche' and Tzeltal in that children in these two Mayan languages acquire first the incompletive aspect. Unlike the aspect prefixes, the children's production of the absolutive prefixes appears to be linked to the frequency of the contexts. Tum is more advanced in the sense that she produced more overt absolutive forms than Xhuw and

Xhim. She produced overt forms of the first person singular absolutive and started producing plural absolutive morphemes. Tum's development mirrors that of Xhim's although at a higher rate. These children produced few cases of ergative morphemes in nominal contexts. The Frequency Analysis suggests that the three children have acquired ergative morphemes at 1;11 before aspect prefixes. According to the Frequency Analysis, even though these children produced status suffixes for imperative, indicative, nominalized, and dependent clauses, they mastered only the indicative status suffix *-i* for intransitive verbs and none for transitive verbs.

More interestingly, while the Frequency Analysis showed that these children have not fully acquired the intransitive and transitive verb inflections, the Productivity Analysis provides evidence for the early acquisition of these verb inflections in Q'anjob'al. The Productivity Analysis showed that these children started making inflectional contrasts on their verbs with status suffixes, then with person prefixes, and finally with aspect prefixes (see Table 5.38).

Gathercole et. al. (1999) studied the productivity of verb inflection in Spanish by evaluating data from Maria (1;6-2;6) and Juan (1;8-2;1). Gathercole, et. al. argue that their two subjects acquired the Spanish inflections verb by verb since the children produced few verbs with different inflections. Spanish verbs have a single suffix inflection that marks a combination of tense, number, and agreement. Thus, Spanish only has a single dimension of contrast marked by the verb inflection. In contrast, intransitive and transitive verbs in Q'anjob'al have separate affixes for aspect, subject, and status. Thus, the inflectional paradigm for intransitive and transitive verbs in Q'anjob'al consequently has three dimensions of inflectional contrast compared with the single dimension for Spanish, and therefore three possible degrees of productivity.

Q'anjob'al children begin to mark aspect contrastively at the age of 2;9. They made an initial contrast between the incompletive and potential aspects. Thus, the Productivity Analysis complements the results from the Frequency Analysis in that these children acquired aspect later than person and status suffixes. The Productivity Analysis indicates that these children produced more contrasts for verb status than for aspect or person. Although the status suffixes are partly linked to aspect distinctions, the children's production of status suffixes appears to be independent of aspect marking. In addition, although the children produced the person markers with a high frequency, they did not display many contrasts for person before the age of 2;9. Overall, the three Q'anjob'al showed an early knowledge of the verb inflection appropriate to imperative, indicative, nominalized, and dependent clauses.

These children omitted the aspect and absolutive prefixes, and status suffixes. The children are still acquiring the constraint on the use of status suffixes in non-final and final positions. The fact that Xhuw dropped the imperative suffix in non-final position may suggest that she assumes the pattern for the use of indicative suffixes applies to both imperative and indicative suffixes. This is a new finding in Mayan language acquisition studies. This idea doesn't account for the imperative suffixes.The children did not show errors with the status suffixes on transitive verbs. They also did not use independent pronouns to replace the ergative prefixes, but they used independent pronouns instead of absolutive morphemes. The fact that these children produced both absolutive and ergative morphemes with intransitive verbs indicates that they analyzed Q'anjob'al as a mixed ergative language. These children distinguished nominalized intransitive verbs from nominalized transitive verbs around the age of 2;1. They also distinguished the morphology of imperative and dependent clauses with intransitive and transitive verbs.

9.2. Revisiting Predictions

Q'anjob'al children followed a Mayan pattern in the sense that they produced bare stems and bare roots, but not randomly. These children produced bare roots in non-final positions due to a syntactic rule in the language. The use of bare stems appeared mostly in final position, but at the same time in non-final position given that these children overextended the status suffix to non-final position. In addition to following this Mayan pattern, these children also produced verb forms that have not been explored in previous Mayan acquisition studies. In other words, these children not only produced bare stems or bare roots, but also produced verbs with all the inflectional morphemes required on the verb and also with the omission of aspect marking with intransitive verbs and the omission of both aspect and absolutive marking with transitive verbs. The production of bare stems and bare roots is even seen at advanced ages (e.g. Tum's data). It is important to note that although these children produced few contexts for derived transitive verbs, it did not prevent them to optionally producing the suffix *-on* on nominalized transitive verbs.

The extension of status suffixes in the non-final position is similar to findings for the status suffixes in K'iche' (Pye, 1990), but different from findings for status suffixes in Yucatec (Pfeiler, 2003). Even though the Q'anjob'al children occasionally used status suffixes with the incorrect aspect or incorrect clause type, they did not produce transitivity errors with the status suffixes as in Yucatec. The Q'anjob'al children also replaced absolutive morphemes with independent pronouns, which is similar to findings in K'iche' (Pye, 1990) or Tzeltal (1998). In these two languages, children also replaced ergative morphemes by independent pronouns, but this did not occur in Q'anjob'al. Q'anjob'al children produced nominalized transitive verbs without a conditioning context, which may be considered as an overextension of ergative morphemes to absolutive morphemes.

The findings suggest that Q'anjob'al children have knowledge of transitivity. If they do not, then we would not see them using the suffix *-on* optionally with transitive verbs in nominal contexts. Also, the children produced the correct person marking on intransitive or transitive verbs. They did not use absolutive subject markers on transitive verbs. Finally, the children correctly distinguished between the transitive and intransitive sets of status suffixes. These results allow us to evaluate the predictions for the acquisition of Q'anjob'al (Table 9.1).

Table 9.1. Summary of Predictions and Findings in Q'anjob'al

Source	Prediction for Q'anjob'al	Findings
K'iche'	Children initially used bare stems	Yes
Yucatec	Children overextend transitive suffix	No
Truncation	Full inflection with matrix clauses	No
Complementation	Constraint violations	No
Root Imperatives	Imperative as default form	No

I reiterate that in this study I do not propose any formal approach for the explanation of the Q'anjob'al child data, but I want to point out some implications that the data have for two acquisition theories: the Truncation Hypothesis (Rizzi, 1993/94) and the Auxiliary Complement Hypothesis (Pinker, 1985). The Q'anjob'al children systematically omitted the inflections for aspect and agreement on their verbs. They did not show a systematic omission of inflectional morphemes as the Truncation Hypothesis would suggest. With intransitive verbs, they omitted absolutive prefixes, but ergative prefixes were almost always present. The children also omitted both aspect and absolutive morphemes on transitive verbs, but they almost never omitted ergative morphemes. From the presence of only ergative morphemes with intransitive and transitive verbs we might assume that these children consider Q'anjob'al to be a nominative/accusative language rather than an ergative language. This assumption is ruled out

due to the fact that these children only used the absolutive prefixes to cross-reference the subjects of intransitive verbs and by the accurate use of the status suffixes.

Another problem for the Truncation Hypothesis is that these children distinguished matrix clauses from embedded clauses at an early age. This hypothesis predicts that whenever a child produces the CP root, then this child is not expected to omit any inflection under CP. I found that this prediction is problematic, especially for nominalization. In nominalized contexts these children optionally omitted the suffix -on marked on transitive verbs, which is not predicted by the Truncation Hypothesis, given that the nominalized transitive verb is headed by a matrix clause, which appears in a different CP. The Truncation Hypothesis also does not predict the overgeneralization of the status suffixes in non-final position.

The Auxiliary Complement Hypothesis predicts that Q'anjob'al children can produce matrix clauses and their complements, but that the children may have problems in using the correct morphology of each complement type. This theory predicts the early acquisition of nominalized and dependent complements in Q'anjob'al. It also predicts the optional omission of the suffix -on in nominalized contexts. However, it does not predict the production of nominalized intransitive and transitive verbs without a conditioning context in the Q'anjob'al child data.

Given that these children produced verb stems in imperative, indicative, nominalized, and dependent clauses, one might expect them to use a bare stem form as a default (e.g. imperative stem) and overextend it across the four types of clauses as Gathercole, et. al. (1999), (Salustri and Hyams, 2003), and the Symbolic Model (e.g. Bybee, 1995) would suggest. It is true that these children showed a preference of bare stems in the four types of clauses, but they distinguished the verb inflection in each clause type and they did not use a default form. The data explored in this study clearly showed that these children distinguished the verb inflection of

imperative clauses from the verb inflection of indicative, nominalized, and dependent clauses. Therefore, they did not use the imperative verb forms as a default in the other types of clauses. These children did not produce the imperative suffix *-an* as a default form for intransitive verbs or the imperative suffix *-j* for derived transitive verbs also as a default form. The suffix *-j* was not even produced by these children as shown in Table 6.18 from Xhuw's status suffixes.

9.3. Future Research

While the findings of the present study are informative about the acquisition of the verb inflection in imperative, indicative, nominalized, and dependent clauses in Q'anjob'al and its theoretical implications for first language acquisition studies, further studies are needed for a full understanding of the acquisition of verb inflection in Q'anjob'al and its relation to other items outside the domain of the verb phrase. With the fact that Q'anjob'al children optionally produced the suffix *-on* with transitive verbs in nominalized clauses, we want to know how they use the same suffix in relativization, negation, and wh-questions. In these syntactic constructions, when the transitive subject is relativized, negated or questioned, the transitive verb takes the suffix *-on*. Also, the fact that Q'anjob'al children overextended status suffixes in final position suggests an analysis of the types of phrases that they produced after the verb phrase. An analysis of the types of phrases that these children produce will enable us to understand the close relation that Q'anjob'al exhibits for agreement and noun phrases. This analysis will also enable us to see a better picture of the acquisition of the third person singular absolutive and the third person singular ergative s- (before consonants) morphemes. The acquisition of word order in Q'anjob'al also remains for future research. Further acquisition studies are needed for adverbs and negation. In contrast to English, the verb phrase in Q'anjob'al is very sensitive to both adverbs and

negation. Thus, in future studies we want to know how children acquire adverbs and negation in Q'anjob'al. A study of adverbs and negation will be informative not only for Mayan language acquisition studies but also for Mayan language studies in general, given that both domains of the Mayan grammar have not been explored in detail. Further studies are also needed on the phonological shapes of verbs that Q'anjob'al children produce.

References

Al-Shboul, S. (2007). On Defaultness in Jordanian Arabic (JA). Doctoral dissetation, University of Kansas, Lawrence, KS.

Acuerdo Gubernativo 1046-87, Guatemalan Law.

Ajsivinac-Sián, J.E. (2007). Complementación en Kaqchikel. Paper presented at the Taller de Complementación II. Guatemala: OKMA.

Aksu-Koç, Ayhan A. and Dan I. Slobin (1985). The Acquisition of Turkish. *The CrosslinguisticStudy of Language Acquisition*. D. I. Slobin (Ed), pp. 839-878. New Jersey, Hillsdale Erlbaum.

Allen, Shanley E. M. (1994). Acquisition of Some Mechanisms of Transitivity Alternation in Arctic Quebec Inuktitut. Ph.D. dissertation, McGill University, Montréal.

Ayres, G. (1981). On ergativity and aspect in Ixil. In Nora C. England (ed.). Journal of Mayan Linguistics, vol. 2, 2.

Benito-Pérez, W.G. (2007). Complementación en Poqom del Sur (Poqomam). Paper presented at the Taller de Complementación II. Guatemala: OKMA.

Bricker, V. R. (1981). The source of the ergative split in Yucatec Maya. *Journal of Mayan Linguistics, 2*(2), 83-127.

Brown, P. (1998). Children's first verbs in Tzeltal: evidence for an early verb category. *Linguistics, 36-4*, 713-753.

Brown, P. (2007). Culture-specific influences on semantic development: Learning the Tzeltal 'benefactive' construction. *In Barbara Pfeiler (ed.), Learning indigenous languages: Child language acquisition in Mesoamerica and in Basque. Hannover: Verlag für Ethnologie, Colección Americana X*, 119-154.

Brown, R. (1973). A First Language: The Early States. Cambridge, MA: Harvard University Press.

Buenrostro, C. (2007). Predicados matrices y cláusulas de complemento en el Chuj de San Mateo Ixtatán. Paper presented at the Taller de Complementación II. Guatemala: OKMA.

Bybee, J. (1995). Regular morphology and the lexicon. Language and Cognitive Processes, 10, 425-455.

Carrillo Carreón, C. (2007). Eearly acquisition of the Split Intransitive System in Yukatek. In B. Pfeiler (Ed.), *Learning Indigenous Languages: Child Language Acquisition in Mesoamerica* (Vol. Studies on Language Acquisition, pp. 69-84). Berlin, Germany: Mounton de Gruyter.

Carrillo Carreón, C. (2005). La adquisición de los pronombres de referencia cruzada en el maya yucateco: a case study. *MA thesis, Universidad Autónoma de Yucatán*.

Coon, J. (2010). Rethinking Split Ergativity in Chol. *International Journal of American Linguistic,* 76(2), pp. 207-53.

Coon, J., and Mateo Pedro, P. (2010). *'Extraction and Embedding in Two Mayan Languages.'* Presented at Formal Approaches to Mayan Linguistics-FAMLi. MIT Department of Linguistics & Philosophy, Cambridge, MA. April 23-25 of 2010.

Craig, C. G. (1977). The Structure of Jacaltec. *Austin: University of Texas Press*.

Danziger, E. (1996). Split Intransitivity and Active-Inactive Patterning in Mopan Maya. *International Journal of American Linguistics, 62*, 379-414.

Dayley, J. P. (1990). Voz y ergatividad en idiomas Mayas. In N. C. E. a. S. R. Elliott (Ed.), *Lecturas Sobre la Lingüística Maya* (pp. 335-398). Antigua Guatemala, Guatemala: Centro de Investigaciones Regionales de Mesoamérica-CIRMA.

Deen, K. U. (2002). The Acquisition of Swahili. *Amsterdam, Netherlands: John Benjamins Publishing*.

Demuth, K. (2007). Acquisition at the Prosody-Morphology Interface. Proceedings of the 2nd Conference on Generative Approaches to Language Acquisition North America (GALANA) Edited by Alyona Belikova, Luisa Meroni, and Mari Umeda, Cascadilla Proceedings Project Somerville, MA 2007.

Demuth, K. & E. Jane Fee. 1995. "Minimal Prosodic Words in Early Phonological Development". Ms, Brown University and Dalhousie University.

Demuth, K. & Tremblay, A. (2008). Prosodically-conditioned variability in children's production of French determiners. Journal of Child Language 35, 99-127.

Demuth, K. (1988). Noun class agreement in Sesotho acquisition. In Barlow, M. & Ferguson, C.A. (Eds.). Agreement in Natural Language: Approaches, Theories and Descriptions (pp. 305-321). CSLI: Chicago U Press.

Demuth, K. (2001). Prosodic Constraints on Morphological Development. In J. Weissenborn & B. Höhle (eds.). 2001. *Approaches to Bootstrapping: Phonological, Syntactic and Neurophysiological Aspects of Early Language Acquisition*. Amsterdam: John Benjamins. *Language Acquisition and Language Disorders Series*, vol. 24, 3-21.

Demuth, K. (2007). Acquisition at the Prosody-Morphology Interface. Proceedings of the 2nd Conference on Generative Approaches to Language Acquisition North America (GALANA) Edited by Alyona Belikova, Luisa Meroni, and Mari Umeda, Cascadilla Proceedings Project Somerville, MA 2007.

de León, L. (1999a). Verb roots and caregiver speech in early Tzotzil (Mayan) acquisition. *In Cognition, discourse, and function., Barbara Fox, Dan Juravsky & Laura Michaelis (eds)*(Standfor, CA: CSLI/University of Chicago Press), 99-119.

de León, L. (1999b). Verbs in Tzotzil early syntactic development. *International Journal of Bilingualism, 3(2/3)*, 219-240.

England, N. C. (1994). Autonomía de los Idiomas Mayas: Historia e Identidad. *Guatemala: Cholsamaj*.

England, N. C. (1983a). *A Grammar of Mam, a Mayan Language*. Austin: University of Texas Press.

England, N. C. (1983b). Ergativity in Mamean (Mayan) Languages. *International Journal of American Linguistics.*

Fernández Martínez, A. (1994). El aprendizaje de los morfemas verbales: Datos de un estudio longitudinal. In A. T. López Ornat, A. Fernández, P. Gallo, & S. Mariscal (Eds.), *La adquisición de la lengua española* (pp. 29-46). Madrid: Siglo XXI de España Editores.

Francisco Pascual, A. (2007). Transitividad y dependencia sintáctica y discursiva en Q'anjob'al. Mexico: Unpublished MA thesis, Centro de Investigaciones y Estudios Superiores en Antropología Social.

Francisco-Pascual, A., Mateo-Toledo, B'., & Zavala, R. (2007). Complementos en Q'anjob'al y la Unión de Cláusulas. Paper presented at the Taller de Complementación II. Guatemala: OKMA.

Fromkin, Rodman, and Hyams. (2007). *An Introduction to Language*, 8th Ed.

Gathercole, V., Sebastian, E., & Soto, P. (1999). The early acquisition of Spanish verbal morphology: Across head board or piecemeal knowledge? *International Journal of Bilingualism, 3*, 133 182.

Guasti, M. T. (2002). Language Acquisition: The Growth of Grammar. Cambridge.

Guasti, M. T. (1993/94). Verb Syntax in Italian Child Grammar: Finite and Nonfinite Verbs. *Language Acquisition*, 3(1) 1-40.
Hamann, C. (2002). From Syntax to Discourse: Pronominal Clitics, Null Subjects and Infinitives in Child Language. Kluwer Academic Publisher.
Hofling, C. A. (2006). A sketch of the history of the verbal complex in Yucatekan Mayan languages. IJAL, vol. 72, no.3, pp. 367-96.
Ingram, D. (1989). First Language Acquisition: Method, Description, and Explanation. Cambridge University Press.
Ingram, D. & Thompson, W. (1996). Early syntactic acquisition in German: Evidence for the modal hypothesis. *Language,* 72, 97-120.
Kaufman, T. (1974). Idiomas de Mesoamerica. *Seminario de Ingracion Social Guatemalteca, 33. Guatemala: Ministerio de Educacion.*
Kaufman, T. (1990). Algunos rasgos estructurales de los idiomas Mayances con referencia especial al K'iche'. In N. C. E. a. S. R. Elliot (Ed.), *Lecturas sobre la Lingüística Maya* (pp. 59-114). Antigua Guatemala, Guatemala: Centro de Investigaciones Regionales de Mesoamérica.
Law, D.; Robertson, J.; & Houston, S. (2006). Split ergativity in the history of the Ch'olan branch of the Mayan language family. IJAL, vol. 72, no. 4, pp. 415-50. Texas, Austin.
Larsen, T. W. (1990). Notas sobre ergatividad en la gramática maya. In Lecturas sobre la linguística maya, compiled by Nora C. England and Stephen R. Elliot, pp. 319-334. La Antigua Guatemala, Guatemala: Centro de Investagaciones Regionales de Mesoamérica (CIRMA).
Larsen, T. W. (1988). Manifestations of Ergativity in Quiché Grammar.
Larsen, T. W. & Norman, W. M. (1979). Correlates of Ergativity in Mayan Grammar. In Ergativity; towards a theory of grammatical relations, edited by F. Plank, pp. 347-370. London: Academic Press. Manning, C. D.
Lengyel, T. E. (1978). Ergativity, aspect, and related perplexities of Ixil-Maya. In Nora England (ed.). Papers in Mayan Linguistics. University of Missouri Museum of Anthropology. Miscellaneous Papers in Anthropology no. 6, Studies in Mayan Linguistics no. 2, pp. 78-91.
Mateo Pedro, P. (2010). Adquisición de la Negación en Q'anjob'al. In Proceedings of the Conference on Indigenous Languages of Latin America-IV. University of Texas at Austin, TX. Accessible at http://www.ailla.utexas.org/site/cilla4_toc.html.
Mateo Pedro, P. (2009). Nominalization in Q'anjob'al. In Stephanie Lux and Pedro Mateo (eds.), Univeristy of Kansas, *Kansas Working Papers in Linguistics* 31: 46-63. Accessible at http://kuscholarworks.ku.edu/dspace/handle/1808/5718
Mateo Pedro, P. (2005). The Acquisition of Inflection in Q'anjob'al. Unpublished MA thesis, University of Kansas.
Mateo Pedro, P. (to appear). Adquisición de la ergatividad mixta en q'anjob'al. In Lourdes de León (Ed), La adquisición de lenguas mesoamericanas: Estructuras, discurso y socialización. México: CIESAS-UNAM.
Mateo Toledo, E. (1999). La cuestión Akateko-Q'anjob'al, una comparación gramatical. Undergraduate thesis. Unversidad Mariano Galvez, Guatemala.
Mateo Toledo, E. (2008a). The Family of Complex Predicates in Q'anjob'al (Maya); Their Syntax and Meaning. Doctoral dissetation, University of Texas, Austin, TX.
Mateo Toledo, E. (1998). Gramática Práctica Q'anjob'al. Guatemala: Universidad Rafael Landivar.

Mateo Toledo, B'. (2003). Ergatividad Mixta en Q'anjob'al (Maya): Un Reanálisis. *www.ailla.utexas.org/site/events.html.*
Mateo Toledo, E. (1999). La cuestión Akateko-Q'anjob'al, una comparación gramatical. *Undergraduate thesis. Unversidad Mariano Galvez, Guatemala.*
Maxwell, J. M. (1976). Chuj intransitives: or when can an intransitive verb take an object? *Mayan Linguistics, 1*, 128-140.
Mondloch, J. L. (1981). Disambiguating Subjects and Objects in Quiche. Journal of Mayan Linguistics 1 (1): 3-19.
Mora-Marin, D.F. (2000). Historical Reconstruction of the Mayan Antipassive. Unpublished dissertation, University of New York at Albany.
Otsuka, Y. (2000). *Ergativity in Tongan.* Doctoral dissertation, University of Oxford.
Par-Sapón, M.B. (2007). Cláusulas de Complemento en K'iche'. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Peake, M. & Curiel-P., A. (2007). Complementación en Tojol'ab'al. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Peñalosa, F. (1992). ¿Cuántos idiomas Q'anjob'al existen? *Boletín de Lingüística, 5,* 1-15.
Pfeiler, B. (2003). Early acquisition of the verbal complex in Yucatec Maya. *Development of Verb Inflection in First Language Acquisition, A Cross-Linguistic Perspective (Eds.) Dagmar Bittner, Wolfgang U. Dressler, and Marianne Kilani-Schoch*.
Pinker, S. (1984). Language Learnability and Language Development. Cambridge, MA: Harvard University Press.
Pine, J. M, & Lieven, E. V. M. (1993). Reanalyzing rote-learned phrases: Individual differences in the transition to multiword speech. *Journal of Child Language* 20, 551-571.
Pizzuto, E., & Chaselli, M. C. (1994). The acquisiton of Italian verb morphology in a cross-linguistic perspective. In Y. Levy (Ed.), *Other children, other languages: Issues in the theory of language acquisition* (pp. 137-187). Hillsdale, N. J.: Erlbaum.
Plunkett, K. (1993). Lexical segmentation and vocabulary growth in early language acquisiton. *Journal of Child Language*, 20, 43-60.
Pye, C. (1980). The Acquisition of Grammatical Morphemes in Quiche Mayan. Doctoral dissetation, University of Pittsburgh, Pensylvania.
Pye, C. (1983). Mayan Telegraphese: Intonational Determinants of Inflectional Development in Quiche Mayan. *Language, 59 (3)*, 583-604.
Pye, C. (1990). The acquisition of ergative languages. *Linguistics, 28*, 1291-1330.
Pye, C. (1991a). The Acquisition of K'iche' (Maya). In Dan Isaac Slobin (Ed.). *The Crosslinguistic Study of Language Acquisition, 3*, 221-308. Hillsdale, NJ: Erlbaum.
Pye, C. (1991b). Learning to Constrain Verb Transitivity, in F Ingemann (Ed.). *1990 Mid-America Linguistics Conferences Papers*, 294-304. Department of Linguistics, University of Kansas.
Pye, C. (1993). A Cross-Linguistic Approach to the Causative Alternation, in Yonata Levy (Ed.). *Other Children, Other Languages*, 243-263. Hillsdale, NJ: Erlbaum.
Pye, C. (1998). Setting the Ergative Parameter. In M. M. T. Henderson (Ed.). *1987 Mid-America Linguistics Conference Papers*, 239-251. Deparment of Linguistics, University of Kansas.
Pye, C. (2002). The Acquisition of Mayan Morphosyntax. *Kansas Working Papers in Linguistics, 26*, 19-38.
Pye, C. (2007). The genetic matrix of Mayan three-place predicates. In Bhuvana Narasimhan, Sonja Eisenbeiss & Penelope Brown (eds.). *Special Edition of Linguistics, 45 (3)*, 653-681.

Pye, C., Pfeiler, B., & Mateo-Pedro, P. (2008). The Acquisition of Status Suffixes in Three Mayan Languages. Paper presented at SSILA, January 4, 2008.
Pye, C., Pfeiler, B., de León, L., Brown, P., & Mateo Pedro, P. (2007). Roots or edges?: A comparative study of Mayan children's early verb forms. In B. Pfeiler (Ed.), *Learning Indigenous Languages: Child Language Acquisition in Mesoamerica* (Vol. Studies on Language Acquisition, pp. 15-46). Berlin, Germany: Mounton de Gruyter.
Quesada, J. D. (1997). A note on Mayan 'Crazy' Antipassivization. *Theoretical Linguistics, 23*, 79-112.
Radford, A. (1990). *Syntactic Theory and the Acquisition of English Syntax: The nature of early child grammars of English*. Cambridge, MA: Basil Blackwell.
Raymundo González, S., Adán Francisco, B'alam Mateo Toledo and Pedro Mateo Pedro. (2000). *Sk'exkixhtaqil yallay koq'anej: variación dialectal en Q'anjob'al*.
Rice, M. L., Wexler, K., & Cleave, P. L. (1995). Specific Language Impairment as a Period of Extended Optional Infinitive. *Journal of Speech and Hearing Research* 38, 850-863.
Richards, M. (2003). Atlas Lingüístico de Guatemala. Guatemala: Universidad Rafael Landívar.
Rizzi, L. (1993/1994). Some Notes on Linguistic Theory and Language Development: The Case of Root Infinitives. *Language Acqusition, 3(4)*, 371-393.
Robertson, John S. 1992. *The History of Tense/Aspect/Mood/Voice in the Mayan Verbal Complex*. Austin: University of Texas Press.
Ross-Montejo, S. A. B. & Delgado-Rojas, I. E. P. (2000). Slahb'ab'anil Kotzotelb'al yul Popti'/Variation Dialectal en Popti'. Guatemala: Cholsamaj.
Rus, D. & Chandra, P. (2006). Child Language Imperatives: Questioning the 'Imperative as an Analogue' Hypothesis. In D. Bamman, T. Magnitskaia, and C. Zaller (eds.), BUCLD 30 Proceedings, 513-524. Somerville, MA: Cascadilla Press.
Salustri, M. & N. Hyams (2003). Is there an analogue to the RI stage in the null subject languages? In B. Beachley, A. Brown, and F. Conlin (Eds.), BUCLD 27, 692-703. Cambridge, MA: Cascadilla Press.
Santiz, R. & Polian, G. (2007). Complementación en Tseltal. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Schüle, S. (2000). Perception verb complements in Akatak, a Mayan language. Doctoral Dissertation, the University of Tubingen.
Schütze & Wexler (1996). Subject Case Licensing and English Root Infinitives. In A. Stringfellow et. al. (eds.), BUCLD 20 Proceedings, 670-681.
Sis-Iboy, M.J. (2007). Datos del idioma Achi. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Tomasello, M. (2003). Constructing a Language: A Usage-Based Theory of Language Acquisition. Harvard University Press.
UNESCO. (2009). *Atlas of the World's Language in Danger*. http://www.unesco.org/culture/ich/index.php?pg=00139 [2009, 2/24/09].
Vázquez-Alvarez, J.J. (2007). Cláusula de Complemento en Chol. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Wexler, K. (1994). Optional Infinitives, head movement and economy of derivation. In *Verb Movement*, eds., N. Hornstein and D. Lightfoot, 301-350. Cambridge, CUP.
Wexler, K. (1998). Very early parameter setting and the unique checking constraint: A new explanation of the optional infinitive stage. Lingua 106, 23-79.

Woolford, E. (2000). Ergative agreement systems. *The University of Maryland Working Papers in Linguistics* 10, 157-191.
Xol-Choc, H. (2007). Cláusulas de Complemento en Maya Q'eqchi'. Paper presented at the Taller de Complementación II. Guatemala: OKMA.
Zavala, R. (1992). *El Kanjobal de San Miguel Acatán*. México: Universidad Nacional Autónoma de México.